



*The Honble Edward Monckton
Summerford Hall County of Stafford*



*The Honible Edward Monckton
Summerford Hall County of Stafford.*





A. C. Muckton

Platform } Purchasers,
Guide } FOR } Builders,
Mate } } Measurers.

IN THREE BOOKS.

- I. *Tables of Simple and Compound Interest*, Resolving all Questions that concern the Purchase of Land, or Leases of Houses: Or the Rebate or Discount of Money, Pensions or Annuities forborne &c.
- II. *General Rules, and Necessary Observations*, appertaining to the erection of Houses or other Edifices; declaring the Quantities of the several Materials belonging to Building, with the usual Rates of them, and of the Works of the respective Artificers therein employed. Whereby Estimates, Valuations and Contracts may be made, without damage either to Builder or Workman.
- III. *Tables ready Calculated*, for the Mensuration of Board, Glass, Timber, Stone, &c. And of the Carpenters, Bricklayers, Plasterers, Glaziers, Joiners and Painters Works, either by the Foot, Yard, Square, Rod, or other measure.

wherunto is added,

The manner how to collect, and cast up a Bill of Measures; And to take the true Draught or Ground-Plat of any Foundation.

By WILLIAM LEYBOURN.

LONDON,

Printed by Thomas Ratcliffe and Thomas Daniel for Nathaniel Brooks, at the Angel in the second yard in Gresham Colledge. 1668.





To the Right Worshipfull

Sir JOHN LAWRENCE Kt.

and Alderman of the City of London.

SIR,

I*T is not from any private Obligation, but for the share I have (though it be but a little one) in the Common Interest and Welfare of the City, which is eminently promoted by your Care and Prudence, that I have studied to give some Testimony of my Gratitude and Observance to you; for as I have never had the happiness to be known to you, so neither to know you otherwise then by that general Fame, and great Character of your Wisdom, Vertue and Fidelity, which have highly endeared you to all intelligent men, and good Citizens. My first notice and motion to this enterprize, happened from the Communication of some judicious and worthy Members of that Honorable Corporation, mentioning, not without admiration, your incessant Study, Care and Activity, as in all other publique affairs of the City, so particularly in that blessed Work of its Rebuilding, and recovery out of the deplorable Ruines, wherein they had observed you were as sedulous and solicitous (and with answerable good success) as any man could be in his private Negotiations. What I thus understood from the private Communications of a few, I have since collected from all mens Discourses, to*

The Epistle Dedicatory.

be the general sence and consent of the whole City. And my Genius inclining to this subject, I thought it also a Duty to be doing; and that I could tender nothing more acceptable to you, than what might conduce to the furtherance of that great, vast, and mighty Work. I had prepared it so long ago, that the more part of it was printed a twelve month since; but a diversion then upon an indispensible occasion to a far distant part of the Country, and a long and violent sickness ensuing, have lodg'd it in the Printers hands unfinished till this late hour of the day. May no like or other Accident make interruption upon your prudent managements, so available and necessary to the recovery of the antient happy and flourishing Estate of the once famous City; That it may be again, (as in all past ages it hath been) *Eor & Propugnaculum Regni*, That it may again disperse nourishment and refreshment into the exhausted Veins and Bowels of the Realm, and become strength and safety to our Gracious Soveraign; for these I am sure are your designs and endeavours, to which if I have any thing contributed by this little Treatise, I have also my end. However it will be some contentment to me, that I have intended will, and that I have given any evidence to the World of the just sence and esteem I have of your singular merit from the Publique, which alone hath rendered me,

SIR,

Your obliged, faithfull and
humble Servant,

William Leybourn.

TO



To the Reader.

Friendly Reader,

THis Treatise which I now present unto thee, I finished in *July* 1667. and in *August* last the more part of it was Printed; at which time I being called away into the Country, it pleased God (immediately after my return) to visit me with a long and tedious sickness, of which I am not yet thoroughly recovered. This my absence, and sickness, so discouraged the Stationer, that he desisted the Printing, till he discovered some appearance of my recovery, which I intimate as the true reason of its so late production. But late as it is, it will supply thee with something thou hast not yet met with, and will justly administer both to *Buyers and Sellers, Landlords and Tenants, Lessors and Lessees, Builders and Workmen* in their respective concerns, the several points and purposes ensuing.

To give thee in brief the scope of the design, here is offered to thee for thy use and benefit: First, Five usefull and necessary Tables of *Anatocisme, or Compound Interest*, calculated to the Rate of *6 l. per Centum per Annum*, for any number of years under 31.

To the Reader.

The First of which Tables will tell you, What any sum of Money being forborn any number of years under 31, will amount unto. The Second shews, That if any sum of Money, due any number of years to come, under 31, what such sum is worth in present Money, Discounting or Rebating after the Rate of 6 per Cent. Compound Interest. The Third will tell you, What Annuity, Rent or Pension, being forborn or unpaid, for any number of years under 31, will be augmented unto. The Fourth shews, What any Annuity, Rent or Pension, to continue any number of years under 31, is worth in present Money. And the Last tells you, What Annuity, Rent or Pension, to continue any number of years under 31, any sum of Money will purchase. These are the Five Tables, and there is no Question that can be propounded in any of these kinds, but one or other of these Tables will resolve it. I have calculated the several Tables both in *Vulgar Numbers*, as *Pounds, Shillings, Pence, and Farthings*, and in *Decimal Numbers* also, to shew the difference between them in the Arithmetical resolving of any Question, whereby the difficulty of the one, and the facility of the other may be discerned. And here I have not only inserted the Tables themselves, but laid down the *Canon, Analogie, or Proportion* by which they were made, whereby the Tables may be continued to any farther number of years, and to any other Rate of Interest. Each particular Table I have illustrated by Examples, in propounding and answering Questions of several kinds, properly appertaining to each Table,

To the Reader.

ble, and such as most men (at one time or other) will have occasion to make use of. For the rendering of the Arithmetical Work in the use of these Tables the more easie, I have (for the benefit of such who are not so well versed in the Science of Arithmetick, as the Use of these Tables do require) added a large Table of *Multiplication*, by which any man may Multiply any large sum, without any charge at all to his memory, although he cannot tell, without Book, that 5 times 6 is 30, or 3 times 4 is 12; which Table also I have made plain and easie by Examples. And for thy farther supply, I have added Tables of *Simple Interest* and *Rebate*, both at 6 and 8 *per Cent.* with the manner how to calculate the like Tables for any time, and for any other *Rate of Interest*: All which are exemplified by *Questions* propounded and answered by help of them.

In the Second Book I have in a plain and familiar way, given you the *Names, Rates, Qualities* and *Quantities* of the several *Materials* belonging to *Building*, and what quantity of each will be requisite for the erecting of any *Fabrick*, great or small; with a near *Estimate* of the *Prizes* of the said *Materials*, and of the *Works* of the several *Artificers* employed in *Building*; not as a *Tax-Master*, but at such moderate *Rates* and *Prizes*, as (I think, nay) I know formerly they would have freely accepted. And by these helps *Estimates, Valuations, and Contracts* may be made without any great damage either to *Builder* or *Workman*. And unto this Second Book I have added the *Design* of the
Carcass

To the Reader.

Carcase or *Timber-Frame* of a *House*, and also of the *Floor*, and several sorts of *Roofs*, declaring the Names of the several *Members* thereof, which will be both profitable to *Workmen*, and delightful to all *Builders*.

In the Third Book, I have *Tables* ready *Calculated* for the *Mensuration* of the principal Materials belonging to Building, as *Board*, *Timber*, *Stone*, &c. And also for the *Mensuration* of the *Works* of the several Artificers therein employed, as the *Carpenters*, *Bricklayers*, *Masons*, *Plasterers*, *Glasiers*, *Joyners*, *Painters*, *Paviors*, &c. whether their *Work* be measured by the *Foot*, *Yard*, *Square*, or *Rod*, the dimensions being taken only in Feet and Inches.

And to bring up the Rear of all, I have added the manner how to collect and cast up a *Bill of Measures*, and to take the true *Draught* or *Ground-Plat* of any *House* or *Ruinous Foundation*, how irregular soever it be.

And now by the way (Friendly Reader) let me acquaint thee, that besides the pains I have taken in the composure of the Five formentioned *Tables*, and exemplifying the uses of them, in the Resolving of such *Questions* as concern *Arithmeticism*, or *Compound Usury*, rendring the *Arithmetical Work* of every of them so plain and easie as it is possible; I have yet (notwithstanding all this pains) made a farther progress in this kind; for I have now published with this Book, *A Large Table* to be hanged up in any Counting-house, or other convenient place, which *Table* declares, and that by inspection, (without any manner of *Arithmetical Calculation*)

To the Reader.

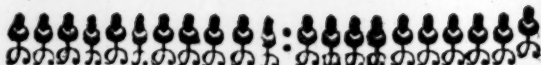
tion) the present worth of any *Annuity, Rent* or *Pension*, either in present *Possession*, or in *Reversion*, from the *Annual Rent* of 20 s. to 100 l. per annum: And for any number of years from *One* to 30; and from thence, by Tens of years, to 100 years; and this *Table* (which is in part the same with my Fourth forementioned) is calculated not only for the *Rate* of 6 l. per Cent. but for the *Rates* of *Six, Eight, Ten, and Twelve Pound* in the *Hundred*; where by only looking upon the *Table*, you may be satisfied, what *Rate of Interest* you are allowed for the Money you lay out in any *Purchase*. Or, If such a *Sum* of *Money* be demanded for such an *Annual Rent*, for such a number of *Years*, this *Table* will immediately inform you what profit the *Seller* or *Lessor* demands, and so satisfy your self of the *goodness* or *badness* of the Bargain. This *Table* (or *Tables* rather) are illustrated by variety of *Examples*, printed with them, in some of which there is something of *Arithmetick* required, but it is no more than the common addition of two or three Sums (at the most) together, which every Child (almost) is able to perform.

And thus (Friendly Reader) this *Table*, or *Tables*, together with the forementioned *Three Books*, I commend to thee, hoping they will prove no less useful unto thee, nor receive worse acceptation from thee, than its *Elder Brethren* have done already; and so I bid thee heartily *Farewell*.

June 24. 1667.

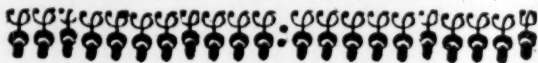
Will. Leybourn.

Errat



ERRATA

Page 6. line 3. *dele* but, p. 9. l. 3. *ad* r. *Art*, l. 16. *dele*
Times, p. 47. over line 12. insert 536.6357. p. 56.
l. 23. 20 years r. 10 years, p. 63. l. 25. r. *are these Tables*,
p. 112. l. 10. *direction* r. *erection*, p. 127. l. 17. r. *it will*
not be impertinent, p. 128. l. 7. r. *reduced to Brick and half*,
p. 169. l. 16. r. *by either*, p. 187. l. 22. *dele* These, p. 191.
l. 12. r. *Table in page 166*. In several places for Cable end
read Gable end.



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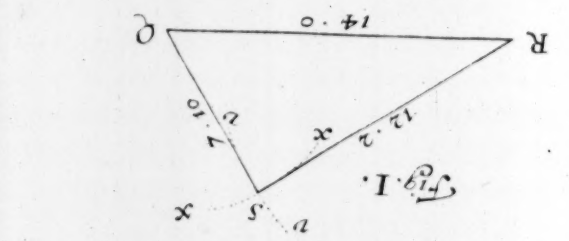
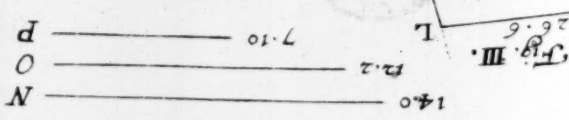
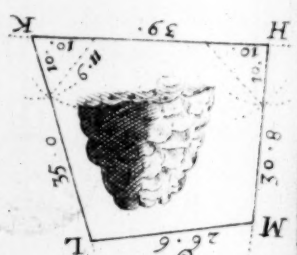
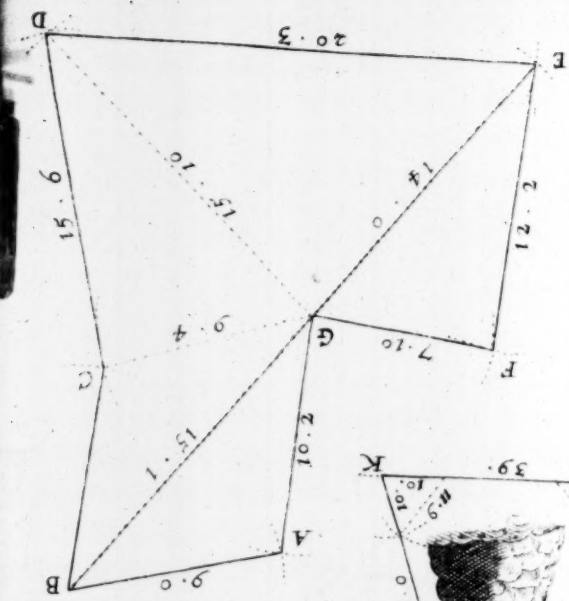
ADVERTISEMENT.

IF any Gentleman, or other Person, desire to be instructed in any of the Sciences Mathematical, as *Arithmetick*, *Geometry*, *Astronomy*, the use of the *Globes*, *Trigonometry*, *Navigation*, *Surveying of Land*, *Dialling*, or the like; Either at their own houses, his habitation, or such other convenient place as the Party shall direct, the *Author* hereof will be ready to attend them at times appointed.

Also, If any Persons would have their Land, or any Ground for Building *Surveyed*, or any Edifice or Building *Measured*, either for the *Carpenters*, *Bricklayers*, *Plasterers*, *Glassiers*, *Joiners*, or *Masons* Work, he is ready to perform the same either for *Master Builder* or *Workman*.

Likewise, If any Person desire to have about his House or Garden, any kind of Sun-Dial, or Dials, of what kind soever, either fixed or movable, he will prepare or make for them such as they shall desire.

You may hear of him at the Shop of Mr. *Nathaniel Brooks* Bookseller, at the Angel in *Gresham Colledge*, now the *Exchange*; Or at the House of Mr. *Walter Hayes*, at the Cross-Daggers in *Moorfields*, next door to the *Popes-head Tavern*, where you may have all sorts of Mathematical Instruments: Likewise at Mr. *Duttons* at the Sign of the Sun-Dial in *Holborn*, over against *Fetter-lane*.




(1)

A
P L A T F O R M
F O R
P U R C H A S E R S .

The First Book.

Ditissimus,
Inquilinus,
Rationarius, } Interlocutors.

Inquilinus.

 I R well met, I make my appearance here at this time, in obedience to the Court, and according to your Summons.

Ditissimus ; You are well met, but I come not hither to meet you only, but others, who (indeed) constrain me to it.

Inq. Indeed I wondered at your summoning of me hither, you know (I think) that I was never addicted to contention ; but upon any occasion of difference, have at all times been more willing to reconcile, than make the breach wider.

B

Ditiss.

Ditif. For my part, I had rather, and could wish that the difference which at present is between us, might be ended by our selves, (if possible) without the troubling of a Court or any other person.

Inq. I am very free to end it without the Court; but your demands are (in my judgement) so unreasonable, that I fear when we do meet it will be but to little purpose.

Ditif. If you think my demands unreasonable, let me hear what overture you will make, that I may judge of the reasonableness thereof.

Inq. When I see you last (I conceive) I made then as fair an offer as you (or any man in reason) could expect from me, who have been to your knowledge so great a loser by the late Casualty.

Ditif. I confess your losses have been great, and I think my proffer to you at our last meeting was very fair: But that you shall see that I am as unwilling to go to Law, or to trouble any Court as you are, what think you if we should refer our difference to our quondam-neighbour and friend *Rationarius*? whom you well know both for his integrity and ability.

Inq. He is the man with whom I have a long-ing desire to speak, and would (could I have heard of him since this general dispersement of friends) have acquainted him with our difference, and advised with him concerning it.

Ditif. I am very glad you so freely condescend to so just and reasonable a proposal, wherefore let us appoint a time to go to him.

Inq. Do you please to nominate the time and place, and I will wait upon you.

Ditif.

Dirif. To morrow morning.

Inq. With all my heart, but I hope we may save that labour, and end our business now; for see, yonder he comes.

Dirif. VVee will motion it to him now, if he be at leasure.

Inq. I conceive it not so convenient now to fall point blank upon him with our particular difference, but (if he be at leasure) let us take him aside, and discourse with him concerning affairs in general between Landlord and Tenant, possibly we may gather from him in discourse, that which may satisfie both you and me concerning our particular, without acquainting him of any difference there is betwixt us. And this way I would the rather go, because (although I be Tenant to you, yet) I have Tenants my self, with some of which I am fearfull I shall have more trouble in contesting with, than I am willing to undergo.

Dirif. I like your motion very well; and one houres discourse with him may give us satisfaction, not only in our own case, but in others of the like nature.

Rati. My good neighbours and friends well met, I am heartily glad to see you both in good health; this late dissolution by Fire hath so dispersed us, that it is a very great mercy and comfort for friends and neighbours to meet one another, but I am heartily glad to see you both.

Dirif. Seeing of you coming this way, we made this stand till you come up to us, intending (if your occasions will permit) to enjoy your good Company, and entertain half an houres discourse with you.

Rati. An hour is at any time at the service either of you.

Inq. I give you many thanks.

Ditif. Whither shall we go ?

Rati. If you think it convenient we will walk while in the *Temple-walks*.

Ditif. There are many contentions and differences that continually arise between Landlord and Tenant since the late dismall Fire, concerning the Leases and Fines given and taken for Houses, so that there is continuall hearings before the Judges, they determining the Cause between them as by Act of Parliament they are ordered and appointed.

Inqui. Methinks it is a great trouble for the Judges to meet as they do; cannot men agree among themselves, but sure it is for want of having some Rule prescribed them to walk by.

Ditif. *Rationarius* Sir, What Rule is there, that may be prescribed for the letting or selling of Leases of Houses ?

Rati. Neighbours, in my judgment there is nothing that I know that is so common among men that requires more serious consideration than the selling or buying, letting or taking of Leases of Land or Houses, and of Houses especially.

Ditif. Why is there more difficulty in the one than in the other.

Rati. Houses are far more incident to casualties than Land is, and therefore cannot have so exact a method (in all cases) prescribed, as in the letting or purchasing of Land; for 1. The Permanency of Land, it decays not as houses do: 2. The common casualties that they are (the best of them) liable to, as by Rain, Winde, &c. which, make them

them continually to be out of repair, so that the
 buyer or seller, the Lessor or Lessee can be at no
 certainty in any wise, and that is one chief reason.

Inq. But such bargains are continually made a-
 mong men, and surely they go not by their own
 judgments only, but by some Rule that carries Au-
 thority along with it.

Rati. The chief Rule that I can prescribe unto
 you, (which is the only and best way to make the
 balance equall between Lessor and Lessee) is the
 Rate that by the present power is set upon Money,
 which at this time is at 6 per Cent. It was in the
 time of King James at 8 per Cent, and in Queen
 Elizabeths daies at 10 per Cent.

Ditif. And pray Sir, how do they value Leases
 from this rate of money?

Rati. When Money was at 8 per Cent, a Lease
 of a House for 21 years was esteemed (generall
 casualties considered) worth 7 years purchase, by
 which account the purchaser was allowed 13 in the
 hundred profit for his money.

Inq. If that were esteemed then as a generall
 rule 21 years for 7 years purchase, What is a
 Lease of a house for 21 years worth, now that mo-
 ney is at the Rate of 6 per Cent?

Rati. You are to observe this as a general Rule,
 that if Interest money decrease, the Purchase of
 Land or Houses increase.

Ditif. This seems strange to me.

Rati. The reason of it is very plain; for the
 less profit is allowed for money, the greater sum
 of money must be disbursed for to bring in the like
 Profit. As for example. When money yielded
 8 in the hundred, 100^l. would then bring in 8^l.

a year, but now it is at 6 per Cent, 100 l. in a year will bring in but 6 l. so that 75 l. when money was at 8. per Cent would yield but 6 l. whereas now 100 l. will yield no more.

Ditif. This is a good reason, and I clearly apprehend it.

Inq. I could not at first conceive so, but I am now convinced, that it is so.

Rati. This being understood, if 13 in the hundred were esteemed a competent and indifferent profit, for a mans laying out of his money upon the purchase of Leases of Houses when money was at 8 per cent, I conceive, that if he have 10 in the hundred allowed for his money, it will be as reasonable and equall as the other was, for at this rate a Lease for 21 years is worth somewhat above 8 years and an half purchase.

Ditif. And this you conceive to be an indifferent rate to be allowed for the purchase of Leases of Houses now money is at 6 per Cent, 21 years for 8 years and an half purchase, and so proportionably for any other number of years?

Rati. Yes, I do account so; but do not mistake me, I do not mean that because 21 years is worth 8 years and an half purchase, that 42 years which is as much time more shall be worth 17 years purchase which is double the money; for (allowing 10 in the hundred profit for the money, as before) a Lease for 11 years will be worth 6 years and an half purchase, a Lease of 21 years will be worth but little more then 8 years and an half purchase, an a Lease of 31 years but 9 years and three quarters purchase; and of 60 years will be but worth 10 years purchase.

Inq.

Inq. I did not conceive, that because 21 years was worth 8 and a half years purchase, that 42 years should be worth 17 years purchase, but on the contrary, I could not conceive that a Lease of 10 years should be worth so much, and one of 60 years worth so little.

Ditif. I cannot conceive the reason of the so great disparity, but would gladly be satisfied how it comes to pass.

Rati. The reason hereof is this: the increase which a man may make of his money by the quick return thereof produceth a profit equivalent with the loss which he sustaineth by parting with so large a Principall out of his hands for so long time, and men know not what error they run into when they set a high rate and value upon a long Lease of a House, and under-value a short one.

Inqui. I should think if a man had money to spare, it were better to purchase a Lease for 40, 50, or 60 years, than for 21 years.

Ditif. I am of your mind also.

Rati. Let me hear your reasons.

Inqui. I conceive (and think that I am in the right) that if I give 7 years purchase for a Lease of 21 years, it will be 7 years ere my Principall money comes in again, and then have I but 14 years remaining for the increase of my money laid out, and in all the time of 21 years shall return my money but three times; Whereas, if I purchase a Lease of of a House of 100 years, which I may have for 13 years purchase, although it will be 13 years before I receive my Principall money in again, yet after I shall have 87 years income for the profit of my money, and in the whole time receive my money al-

most 8 times over, and therefore I conceive the purchase of a long Lease (the price thereof so little augmenting) is far more beneficiall for me to purchase than a usuall Lease for the term of 21 years.

Rati. This is that which deceives most men, But let me tell you, if you purchase a Lease of 21 years for 7 years purchase, though you return your money but three times in all that 21 years, yet you are then at liberty to make such another bargain for 21 years longer, and after that for 21 years more; And if you continue so doing for five changes, which will be 105 years, (whereas your other one Lease was 100 years) you shall returne your Principal 15 times over, of which ten of those will be clear gain, and by the other Lease of 100 years, his profit will not be much above halffo much.

Disis. I perceive by the president you have here given, that it is so; but the reason why it is so, I understand not.

Rati. The reason is this, long Leases are much overvalued, and short Leases undervalued, for in the purchase of a long lease the purchaser hath not above 8 in the hundred profit for his money; whereas in the purchase of a shorter Lease he hath after the rate of 13 in the hundred allowed him; but this is for want of due consideration, and practise hath made it almost a custome

Inq. How may these abuses be rectified, and men have a ballance to weigh these differences in, thereby to do right: both to *Landlord* and *Tenants*?

Disis. I do not see, but by what you have delivered, a man may as well wrong himself in letting of long or short Leases, as him that he deals withall.

Rati.

Rati. You say very right,

Ditif. To whom then shall we apply our selves.

Rati. To act the impartial Iudge and the determiner of all such differences; who neither regards buyer nor seller, *Landlord* or *Tenant*, but that both shall have an equall proportion in time and profit, to which I refer you.

Inqui. I would gladly embrace and honour so just a master.

Ditif. And I reward him to the best of my ability.

Rati. You are both my loving friends and neighbours, and I tell you, I have composed five Tables; which Tables will resolve any Question that can be proposed either for buying of Land or letting Leases of either Land or Houses, for Times Reversions, Pensions, Annuities, or any thing else of that nature; which Tables I have calculated for the present worth of money as now it is constituted, namely at 6 per Cent. compound interest, which Tables at our next meeting I will freely shew you, and the manner how to use them; wherefore when you have armed your selves with Questions, if you repair to me, I will shew you the way how by my Tables to resolve them, and any of the like nature; and also give you directions how to make the like Tables for any other rate of Interest, and for what number of years you please. And now (till our next meeting) I bid you both heartily farewell.

Inqui.

*Inquilinus.*

SIR, I am come to wait upon you to know what time would be convenient for us to go to our friend *Rationarius*, to see those Tables he told us (at our last meeting) he had Calculated, and would shew us, and the use of them, in answering of Questions concerning Interest and Annuities, and about the selling or letting of Land or Houses, for I have diverse Questions to propose to him, which if his Tables will resolve (as I do not Question but they will, we having his word for it) they will prove to be of singular use to all men as well as to you and me.

Disissimus. I had been with him before now, but that I expected you to call me; for I have several Questions concerning my own affairs which I would have him shew me how to resolve; wherefore I am ready at any time to go to him, now if you will.

Inq. I came to you for that very end.

Disif. Come then, let us go.

Inq. I will wait upon you.

Disif. Sir we have made bold to trouble you at this time, to claim the promise you were (at our last meeting) pleased to offer so freely unto us.

Rationarius. Gentlemen and Friends, you are welcome to me, and what is in my power, is at your command. You speak now concerning the Tables of Compound Interest which I told you I had Calculated.

Inq.

Inq. We do Sir.

Rationarius. Pray Gentlemen sit down, and I will bring them to you.

Ditif. How free is this Gentleman to impart his knowledge to us upon so slender an acquaintance?

Inqui. I ever observed him to be of milde and free temper and disposition, and now I finde him to be so.

Rationarius. See here Friends, these are my five Tables I told you of.

By the first of which you may know, *What any sum of money, being forborne any time under 31 years, will be augmented unto.*

My second will resolve you, *That if a sum of money be to be forborne any number of years under 31, What that sum is worth in ready money.*

The third will tell you, *What any Annuity, Rent or Pension, (to be annually paid) will amount unto, if the same be forborne any number of years under 31.*

And by the fourth you may finde, *What any annuall Rent, Pension, or the like (if forborne any number of years under 31) will yield (or is worth) in ready money.*

And my fifth Table will informe you, *What Annuity, Rent, or Pension, payable yearly, any sum of money will purchase.*

Inq. Indeed they are all of singular good use, I wish I understood them, and knew how to use them.

Ditif. In my judgment the last Table seems to be of the most generall use.

Rationar. They are all so usefull, that at one time or other, either the *Seller or Purchaser, the Landlord*

Landlord or Tenant, the Debtor or Creditor, will have occasion for them, and if any of them had been superfluous, I would not have taken the pains to calculate it, But if you are provided of Questions of which you would be resolved, let me see them, and you shall receive satisfaction in the solution of them.

Inq. Those which I desire to be resolved in, are here in Writing.

Ditif. And so are mine also.

Rationa. Let me see them—— In the resolving of these *Questions* all the five Tables will be made use of. Some of them will be answered by my first Table, some by the second, &c. Wherefore, I will pick out all that are to be resolved by the first Table first, and then such as will come under the notion of the second; and so of all the rest in order, all which you shall see easily and familiarly resolved.

THE

THE
Description, Construction and Use
OF

FIVE necessary TABLES.

Calculated (both in Decimal
Numbers, and according to Vul-
gar Arithmetick) after the
rate of 6 per Cent. com-
pound Interest.

By which the present worth of
any Sum of Money to be forborn
for any number of Years, or to be
discounted or rebated for, or any
Annuity, Rent or Pension, either
in present Possession or in Rever-
sion, is worth in Ready money.

L O N D O N,

Printed in the Year, 1667.

THE ...

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The first Table.

Declaring what any Sum of Money, being for-
born any number of Dayes, Weeks, Moneths,
or Years, under 31. will be augmented
unto, accounting Interest upon Inte-
rest at 6 per Cent. per Annum.

l. s. d. q.					Decimal parts.	Years	l. s. d. q.					Decimal parts.
Dayes.						1	1	1	2	2	1.06000	
	1	0	0	0	1.00000	2	1	2	5	2	1.12360	
1	1	0	0	0	1.00031	3	1	3	9	3	1.19105	
2	1	0	0	0	1.00048	4	1	5	3	0	1.26147	
3	1	0	0	0	1.00064	5	1	6	9	0	1.33922	
4	1	0	0	0	1.00080	6	1	8	4	2	1.41852	
5	1	0	0	0	1.00096	7	1	10	0	3	1.50363	
6	1	0	0	0	1.00096	8	1	11	10	2	1.59385	
						9	1	13	9	2	1.6948	
						10	1	15	9	3	1.79085	
						11	1	17	11	2	1.89830	
1	0	0	1	1.00112		12	2	0	3	0	2.01219	
1	0	0	2	1.00224		13	2	2	7	3	2.13292	
1	0	1	0	1.00336		14	2	5	2	2	2.26090	
						15	2	7	11	1	2.39656	
						16	2	10	9	2	2.54035	
						17	2	13	10	1	2.69277	
1	0	1	1	1.00487		18	2	17	1	0	2.85424	
1	0	2	1	1.00976		19	3	0	6	0	3.02560	
1	0	3	2	1.01467		20	3	4	1	3	3.20714	
1	0	4	3	1.01961		21	3	7	11	3	3.39956	
1	0	5	3	1.02457		22	3	12	0	3	3.60354	
1	0	7	0	1.02956		23	3	16	4	3	3.81975	
1	0	8	1	1.03457		24	4	0	11	3	4.04893	
1	0	9	2	1.03961		25	4	5	10	0	4.29187	
1	0	10	3	1.04467		26	4	10	11	3	4.54938	
1	1	0	0	1.04975		27	4	16	5	2	4.82234	
1	1	1	1	1.05486		28	5	2	2	3	5.11168	
						29	5	8	4	2	5.41838	
						30	5	14	10	1	5.74349	

A Description of this TABLE.

Rational. **B**Efore I declare unto you, either the Construction or use of the Table, I will first discover the parts of it unto you, which are chiefly two. The first consisting of *Dayes, Weekes* and *Moneths*, As of *Dayes* from one to 6 compleat of *Weekes* from 1 to 3 compleat, and of *Moneths* from 1 to 11 compleat. The second consisteth of *Years*, from one *Year* to 30 *Years* compleat.

Now against every *Day, Week, Month, and Year*, there stands in two Rows or Columns, two certain Numbers, the one of *Pounds, Shillings, Pence*, and *Farthings*, thus marked or noted at the head of each Column, *l.s.d.q.* *l.* signifying *Pounds*, *s.* *Shillings*, *d.* *Pence*, and *q.* *Farthings*, these numbers stand in the first of the two broad Rows or Columns. And in the second Column, there stands divers other Numbers, called (as by the title over them may appear) *Decimal parts*.

So in this first Table, against 1 *Year*, you shall finde *1 l. 1 s. 2 d. 2 q.* to stand, and the *Decimal part* that stands against the same year is, *1.06000* which in *Decimals* signifies the same with *1 l. 1 s. 2 d. 2 q.* the figure 1 standing to the right hand signifying one pound sterling, and the other figures *06000* are the *Decimal parts* of a pound sterling.

Inquil. I see plainly that against 1 year there stands *1 l. 1 s. 2 d. 2 q.* and also this number *1.06000* and likewise that against 7 years there stands *1 l. 10 s. 0 d. 3 q.* and this number *1.50363* — and also that against 23 years there stands *3 l. 16 s. 4 d. 3 q.* and this *Decimal part*.

Disissim

Ditif. I perceive the same also, and that against 2 weeks there stands $1\text{ l. } 0\text{ s. } 0\text{ d. } 2\text{ q.}$ with this Decimal part 100224. ——— And that against 6 months there stands $1\text{ l. } 0\text{ s. } 7\text{ d. } 0\text{ q.}$ with this Decimal part 102956. but what the meaning thereof is, I know not.

Inq. I am at a stand for that also.

Ration. Concerning that, I will give you immediate satisfaction. The $3\text{ l. } 16\text{ s. } 4\text{ d. } 3\text{ q.}$ which you see stand against 23 years, declares thus much, *That if one pound or 20 shillings should be forborn for 23 years, it would be augmented or increased to $3\text{ l. } 16\text{ s. } 4\text{ d. } 3\text{ q.}$*

Inq. Is that the meaning of it? and is it so in all the rest of the numbers?

Ration. The same.

Inq. So then this Table tells me, that if 20 s. or one pound should be forborn 3 years, it would be augmented or increased to $1\text{ l. } 3\text{ s. } 9\text{ d. } 3\text{ q.}$ and in 10 years it would be increased to $1\text{ l. } 15\text{ s. } 9\text{ d. } 3\text{ q.}$ and in 28 years, to $5\text{ l. } 2\text{ s. } 2\text{ d. } 3\text{ q.}$ ——— Or in 6 months it would be increased to $1\text{ l. } 0\text{ s. } 7\text{ d. } 0\text{ q.}$

Ration. You understand it rightly, and that is the true intent and meaning of those numbers set against any number of *Days, Weeks, Months, or Years.*

Ditif. I unde stand this very well, but Sir, what do those Decimal parts which stand in the other Column against every year signifie? I understand not them.

Inq. Nor I neither.

Rat on. They signifie the same in Decimals, as the other do in Pounds, Shillings, Pence, and farthings.

things. Supposing one pound or 20 s. to be divided into 100000 parts. — As against 5 years, you see there stands 1 l. 6 s. 9 d. and this Decimal part 1. 33822. Now the figure 1, which stands towards the right hand, having a point after it, signifies 1 l. and 33822. which stands towards the right hand of the point, signifies, that if one pound, or 20 s. were divided (as here we suppose it to be) into 100000 parts, that number is 33822 of those parts, which is equal in value to 6 s. 9 d.

Inq. So then the Decimal part which stands against 13 years, being 2. 13292. signifies 2 l. and 13292 parts of a pound, the pound being supposed to be divided into 100000 parts, which 13292 parts is equal in value to 2 s. 7 d. 3 q.

Ration. You apprehend as it is. And the reason that these numbers are so put, is for ease in Calculation, as I shall discover to you anon, all Multiplication of Pounds, Shillings and Pence, being by this means avoided, and the multiplying of whole numbers only effecting the work intended with more facility and exactness; as in the construction and use both of this, and the other Tables, you will plainly perceive. And so now I will shew you.

The Construction of this T A B L E.

Inq. **T**hat will be very satisfactory to me.

Diris. And to me also.

Ration. Then I will discover unto you the making of them, both according to vulgar Arithmetick, and also according to Decimals; and thereby you shall judge of the difference, and use that which best likes you. And here note, that all these 5
Tables

Tables are composed according to the present worth of money as it is by authority allowed, which at this time is at 6 *l. per cent.*. This being presupposed, the Analogie or proportion by which this Table is composed, is as followeth.

I. By Vulgar Arithmetick.

As 100 *l.*

Is to 106 *l.* the Principal and Interest for one year,

So is 1 Pound or 20 *s.*

To the increase of 1 *l.* or 20 *s.* in a year.

Wherefore you must say by the Golden Rule, or Rule of Three. Say,

If 100 *l.* in a year, will be augmented to 106 *l.* to what will 1 *l.* be augmented to in the same time?

Inq. This stands to good reason.

Ration. Set your numbers in this Order,

If 100 *l.* yeild 106 *l.* what 1 *l.*

You must turn your 106 *l.* first into shillings, by multiplying it by 20, and it will make 2120 *s.* then you must turn those shillings into Pence, by multiplying them by 12, and they make 25440 *d.* these pence you must turn into Farthings, by multiplying them by 4, and they make 101760 *q.*

These farthings you must divide by 100, (which is done by cutting off the two last figures towards the right hand,) and the Quotient is 1017 farthings, and $\frac{1}{4}$ of a farthing, and to so much will 1 *l.* or 20 *s.* be increased to in a year.

Then divide 1017 by 4, and it produceth 254 *d.* and 1 *q.* $\frac{1}{4}$.

Divide 254 *d.* by 12, it produceth 21 *s.* and 2 *d.*

(20)

which turned into Pounds, is 1 *l.* 1 *s.* 2 *d.* 1 *q.* $\frac{6}{10}$. and so much will one Pound be increased unto in a year, as by the Work following you may see.

<i>l.</i>	<i>l.</i>	<i>l.</i>
If 100	yield 106.	what 1
	20	

	2120	Shillings
	12	

	4240	
	2120	

	25440	Pence.
	4	

	1017	60 Farthings.

$2 (1 q. \times (2 d.$
 $\times 10 \times 7 (2 s. 4 (21 s.$
 444×22
 \times

l. *s.* *d.* *q.*
 1 — 1 — 2 — 1 $\frac{6}{10}$ of a Farthing.

But in the Table I have set down the increase for one pound to be 1 *l.* — 1 *s.* — 2 *d.* — 2 *q.* because $\frac{6}{10}$ of a farthing, is above half a farthing.

1. q. This is plain and easie, but very tedious.

Ration. It is so, wherefore I will shew you how to find the Decimal part belonging to the increase of one pound or 20 *s.* that you may see the difference; For which this is the proportion.

II. B

II. *By Decimals.*

As 100 l.

Is to 106 l. the principal and increase,
 So is 1, or Unity, with any number of Cyphers
 added to it, (as five) to the Decimal belonging
 to the increase of one pound.

Wherefore set your numbers thus.

As 100 l. to 106 l. so is 1 l. 00000 to what?

Multiply 1 l. 00000 by 106 l. and it produceth
 10600000, which divide by 100 (which is done
 by cutting off the two last figures or Cyphers to
 the right hand) and it then is 1. 06000. As by
 the Work you may see.

$$\begin{array}{r}
 100 \text{ l. } \text{---} 106 \text{ l. } \text{---} 1 \text{ l. } 00000 \\
 \phantom{100 \text{ l. } \text{---} 106 \text{ l. } \text{---} 1 \text{ l. } } 106 \\
 \hline
 600000 \\
 1.000000 \\
 \hline
 1.06000 | 00
 \end{array}$$

This 1. 06000 is the Decimal-part belonging to
 the increase of 1 l. or 20 s. for a year, and is the
 same number with that in the Table.

Inq. This is wonderfull easie and expeditious
 over the other is; but is it so exact?

Ration. Every jot, and the more Cyphers you
 add to Unity, the more exacter it will be, as after
 a while I will discover unto you. But first let me
 shew you how to find the numbers belonging to
 the second, third, and fourth years, &c.

Dirif. That will be very convenient.

Ration. They are thus found, the Analogie being much the same. For,

As 100

Is to 106000 the increase for 18.

So is 106, the principal and interest for 1 year.

To 1 12360, the increase for 2 years.

And this is the second number in the Table.
Then for the third number. Say,

As 100

Is to 1 12360 the increase of 20 s. for 2 years,

So is 106 the principal and interest for 1 year.

To 1 19101 the increase for 3 years.

And thus may you continue the Table to what number of years you please.

Inq. Then for the fourth year, I must say,

As 100

Is to 1 19101

So is 106

To a fourth number.

That is, I must multiply 1 19101 (the preceding years increase) by 106 (the common principal and interest) and cutting off the two last figures; So have I 1 26247 for my fourth years increase, as I have here done it.

$$100 \text{ --- } 1.19101 \text{ --- } 106$$

$$106$$

$$714606$$

$$1191010$$

$$1.26247 | 06$$

Ration.

Ration. You understand it very well, and have truly wrought it.

Inq. I thank you for your instructions, which are so plain, that he must be very ignorant indeed, that cannot learn by your directions.

Ditif. What hath been hitherto delivered, I right-well understand, and I like these Decimal parts, and prize them for their ease and facility in the Arithmetical work; Division being wholly avoyded. But when I have found these numbers, I know not what to make of them, that is, I do not know how to find how many Pounds, Shillings, Pence, and Farthings, are contained in this 1.12360 (which is the second number) in the Table, or any other.

Ration. Having thus given you the general Description and construction of this Table, in the which I have been the larger, because I would remove all obstacles in those that follow, (for those are made either by the converse Rule, or some other equivalent.) I should now proceed to answer your Questions, but first I will shew you how you shall readily turn any Decimal part into Pounds, Shillings, Pence, and Farthings, which is the thing you now desire.

Ditif. Were I satisfied in that, I should think the use of the Table's easie.

Inq. I conceive, when I understand how to do that, I shall lay by Multiplying and Dividing of Pounds, Shillings, and Pence, and make use of these Decimal-parts which resolves the Question, as if they were numbers all of one denomination.

Ration. They do so indeed, and he that knows how to use them, will (in these and the like cases)

never use the other; however, I have set them down both wayes, that any man may use that which pleaseth him best. / But now let me shew you how to turn a Decimal part into Pounds, Shillings, Pence, and Farthings.

Inq. That I would gladly know.

Ration. For to set down the whole Pounds, and the whole Shillings, from any Decimal part, is as easie, as to set them down the usual and common way; but to set down the parts of a Shilling, that is, the Pence and Farthings, is somewhat more troublesome, for that it will require a Table of Reduction, such as I have here inserted, which shews the quantity of Pence and Farthings which are contained under any Decimal part less than 500, 500 being the decimal part belonging to one Shilling, 250 the decimal part of 6 d. 125 the decimal part of 3 d. and 188 the decimal part belonging to 4 d. 2 q. and 073 the decimal part belonging to 1 d. 3 q. and so the rest as in the Table.

Disif. I think I apprehend the use of this Table; As thus. If I have a Decimal part, being 365, is not that answerable to 8 d. 3 q? and if I have 302, is not that answerable to 7 d. 1 q?

Ration. It is so, and so throughout the Table, what number of Pence and Farthings stand against your Decimal part, those are the value of that Decimal part.

A TABLE of Reduction, shewing the Fraction parts of a Shilling in Decimal Numbers.

Decim. D	2	Decim. D	2	Decim. D	2
parts.		parts.		parts.	
0100	1	1774	1	344 ⁸	1
0210	2	1884	2	354 ⁸	2
0310	3	1984	3	365 ⁸	3
0421	0	2085	0	3759	0
0521	1	2195	1	3859	1
0631	2	2295	2	3969	2
0731	3	2405	3	4069	3
0832	0	2506	0	417 ¹⁰	0
0942	1	2606	1	427 ¹⁰	1
1042	2	2716	2	437 ¹⁰	2
1152	3	2816	3	448 ¹⁰	3
1253	0	2927	0	458 ¹¹	0
1353	1	3027	1	469 ¹¹	1
1463	2	3127	2	479 ¹¹	2
1563	3	3237	3	490 ¹¹	3
1674	0	3338	0	500 A Shil.	

Inq. This Table, and how to apply it, I understand very well; but how to set down the Pounds and Shillings, I understand not yet.

Ration. That I tell you is easie, and the manner how to effect it, I will now shew you. ——— Suppose 2. 13292 (which is the Decimal against 13 years)

years) were a Decimal part given, and you would know how many Pounds, Shillings, Pence, and Farthings it contains. You are to take notice that the figure 2. which standeth before the point, is two Pound, wherefore set down 2 *l.* for that. Then for the figure next following the point (which here is 1) you must for every Unite thereof set down two Shillings; wherefore, this being but one, you must therefore for it set down 2 *s.* (if it had been a 2, you must have for it set down 4 *s.* if a 3, 6 *s.* if a 4, 8 *s.* &c.) But now for the other figures remaining, namely 3292, you may (in this case) reject the last 2, and look 329 in your Table, which you cannot find, but the nearest to it in the Table is 323, against which stands 7 *d.* 3 *q.* wherefore the 3292 (or 329) signifies 7 *d.* 3 *q.* and so is the whole value of your Decimal part 2. 13292, 2 *l.* 2 *s.* 7 *d.* 3 *q.* as you may see it against the 13th year in my first Table.

Inq. I think I apprehend this.

Ration. Come then; Set me down the value of this Decimal part 3.81975. in Pounds, Shillings, Pence, and Farthings.

Inq. I will try. First, for the 3 which stands before the Prick, I set down 3 *l.* then for the 8 (which is the next figure after the prick,) I set down 16 *s.* then have I remaining 1975. I reject the 5, and look in the Table for 197, which I find not, but I find 198, which is the nearest thereto, and against it I find 4 *d.* 3 *q.* which I set down, and so my Decimal 3.81975 is in value equal to 3 *l.* 16 *s.* 4 *d.* 3 *q.*

Ration. You apprehend it well, and have set it down right; but that you may at no time be at losse, let me see you give me the value of this Decimal

cimal 3. 39956, in Pounds, Shillings, Pence, and Farthings.

Inq. First, for the 3 which stands before the prick, I set down 3 *l.* than for the 3 after the prick, I set down 6 *s.*

Nay, here you are in an error, for in setting down your shillings, you must, if the second figure after the prick, be 5, or above 5, (as here it is 9) for it set down one shilling more than the double of the figure next after the prick; So here instead of 6 *s.* you must set down 7 *s.* and taking (in your mind) 5 from 9, there will remain 4956. then rejecting the 6, you have 495 remaining, which you cannot find in the Table, but the nearest to it is 490, or 500. 11 *d.* 3 *q.* standing against 490. and one shilling against 500, wherefore the Fraction in truth is 11 *d.* 3 *q.* half farthing, but in my Table against the 21 year, I have set it down 3 *l.* 7 *s.* 11 *d.* 3 *q.* but you see the Decimal part makes it more; which of the two is the exacter?

Inq. Sir, I think I understand you; but lest I should be too confident, pray give me a Decimal part to set down in Pounds, Shillings, Pence, and Farthings, that I may have all the difficulties in it that can possibly arise.

Ration. Well then, give me the value of this Decimal part, 1. 68948.

Inq. I will attempt it. And first for the 1 before the prick, I set down 1 *l.* Secondly, for the 6 after the prick, I should set down 12 *s.* but being a figure above 5 follows, namely 8. I set down 13 *s.* and taking 5 from 8, there remains 3. wherefore I seek 394 in my Table, but it being not there, the nearest is 396, against which stands 9 *d.* 2 *q.* which

I set down, and so is the Decimal 1. 68948 reduced to 1 *l.* 13 *s.* 9 *d.* 2 *q.*

Ration. You have done it very right, and you understand the manner of working very well; only you may observe this one thing, which is not very material, that if the last figure of the number which you are to reject be 7, 8 or 9, you may add one to the figure going before, as in the example you last wrought, when you had set down your 1 *l.* 13 *s.* there remained 3948, now being you are to reject the 8, add 1 to 394, and call it 395, which seek in the Table, the nearest to which is 396 as before; this you may observe if you will, but you see it is to little purpose in this Case. —

And now Friends, I having first given you a Description of the Tables, and secondly the Construction of them, with the manner how to set any sum or number therein down both in Vulgar and Decimal numbers, (in which I have been the larger in this, for that in the other four Tables, I intend only to give you a general account of them.) It remaineth now that I shew you the general use of these Tables; but I think it now draws towards Noon, and I have held you over long from your more weighty affairs, and my self have some business which at present calls me away; but if you please to repair to me in the Morning, I will give you Answers of all your Questions, by which, you will perfectly understand the full use of all my five Tables.

Dit is. Sir, I give you many thanks for the great trouble I and my Friend have already put you to, and for the benefit which we shall receive by your Instructions, we shall hardly be able to make you
any

any competent satisfaction; but ceasing further to trouble you at present, I shall bid you farewell.



Questions Resolved by the First TABLE.

Ration. **G**entlemen and Friends, you are welcome, I expected you an hour since, which time I have bestowed in turning over your Questions, and laying such together as concern the several Tables; and they being thus sorted, we will begin with those that concern the First Table, which I find to be these.

Question I.

What will 500 l. amount unto if it be forborne 4 years, after the rate of 6 per Cent. compound Interest?

Look in the first Table for 4 years, against which stands 1 l. 5 s. 3 d. and this Decimal part 1.26247. which shews, that if 1 l. be forborn 4 years, it will amount or be increased, to 1 l. 5 s. 3 d. if so, then 500 l. will be increased to 500 times 1 l. 5 s. 3 d. and to know how much that is, you must

By Vulgar Arithmetick

Turn 1 l. 5 s. 3 d. into pence, by multiplying the pounds by 20, and the shillings by 12, (as in the following work you may see done) and they make 303 pence, which multiplying by 500 l. (the sum

(30)

sum forborne) and it makes 151500 *d.* which turned into pounds sterling (by dividing it first by 12, and then by 20,) it produceth 631 *l.* 5 *s.* as by the following work appears.

<i>l.</i> — <i>s.</i> — <i>d.</i>	
1 5 3	30
20	5 ³ 00
<hr/>	<hr/>
25 <i>Shillings</i>	151500
12	xxxx
<hr/>	3736
53	151500 (1262 (5 <i>s.</i> (631 <i>l.</i>
25	122222 2220
<hr/>	xxxx
303 <i>Pence</i>	

And to so much will 500 *l.* amount unto, being forborn 4 years, namely to 631 *l.* 5 *s.* Thus is the Question resolved by Vulgar Arithmetick, now we will do it.

By the Decimal parts.

The Decimal standing against 4 years, in the Table, is 1.26247, which multiply by 500, (the sum forborne) and it produceth 63123500, from which if you cut off the five last figures towards your right hand, it will be 631.23500, which 631 are 631 *l.* and the 23500 reduced, maketh 4 *s.* 8 *d.* 2 *q.* So that 500 *l.* being forborn 4 years, will be increased unto 631 *l.* 4 *s.* 8 *d.* 2 *q.* as you may

may see by the Arithmetical operation following;

1. 26247	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
500	631	— 4	— 8	— 2
<hr style="width: 20%; margin-left: 0;"/>				
631. 23500				

Differing from the other 3 *d.* — 2 *q.*

Inq. I understand the working by the Table already, both by Vulgar Arithmetick, and by the Decimal part, and do highly esteem of the Decimal parts, rather than the Vulgar way; for these two reasons. First, for that here is no need of reducing the money into its least denomination, by Multiplication, and then to reduce it back again to its greater by Division. And Secondly, because Division is wholly avoyded, and one single Multiplication performs the work.

Ans. I understand the manner of working, both by the Vulgar numbers, and Decimal parts also, and (for the reasons you have given) do approve of the Decimals best. But Sir, before you proceed to another Question, I would gladly be satisfied in two particulars which I doubt of, and am unsatisfied in. — First, Why, when you multiplyed the Decimal part 1. 26247 by 500, you cut off (or seperated by a point) five figures towards the right hand, neither more nor less. And — Secondly, How comes it to pass, that there is a difference of 3 *d.* 2 *q.* between the Vulgar, and the Decimal way ?

Ration.

Ration. I will answer both your Objections immediately. And first, The reason why five figures only were cut off, is, because in the Decimal part, which was Multiplied (namely 1. 26247) there were only five figures towards the right hand beyond the prick. ——— And secondly, the reason why the difference of 3 d. 2 q. did arise was, because the Decimal part 1. 26247 did not amount to full 1 l. 5 s. 3 q. but wanted thereof about the tenth part of a farthing, so that 3 d. was the nearest number that could be expressed in the Table.

Ditisi. I am satisfied well in both the particulars, wherefore be pleased to proceed to another Question.

Question II.

If 324 l. be forborne for the term of 18 years, what will it be increased unto after 6 per Cent ?

In the Table against 18 years, you shall find 2 l. 17 s. 1 d. which being reduced into pence, produceth 685 d. this multiplied by 324 l. produceth 221940 d. which reduced into shillings by dividing it by 12, giveth 18495 s. and this divided by 20, giveth 924 l. 15 s. As by the work appears;

(33)

2 l. — 17 s. — 1 d.

20

17

4

57 Shillings.

12

115

57

685 Pence.

324

2740

370

55

228940

228940

228940

228940

228940

228940

228940

228940

228940

So that 324 l. being forborne 18 years, will amount unto 924 l. 15 s.

By the Decimal part thus.

The Decimal part against 18 years, is 2.85434.

which multiplied by 324 l. produce this number,

D

ber,

Ration. I will answer both your Objections immediately. And first, The reason why five figures only were cut off, is, because in the Decimal part, which was Multiplied (namely 1.26247) there were only five figures towards the right hand beyond the prick. ——— And secondly, the reason why the difference of 3 d. 2 q. did arise was, because the Decimal part 1.26247 did not amount to full 1 l. 5 s. 3 q. but wanted thereof about the tenth part of a farthing, so that 3 d. was the nearest number that could be expressed in the Table.

Ditisi. I am satisfied well in both the particulars, wherefore be pleased to proceed to another Question.

Question II.

If 324 l. be forborne for the term of 18 years, what Will it be increased unto after 6 per Cent ?

In the Table against 18 years, you shall find 2 l. 17 s. 1 d. which being reduced into pence, produceth 685 d. this multiplied by 324 l. produceth 221940 d. which reduced into shillings by dividing it by 12. giveth 18495 s. and this divided by 20, giveth 924 l. 15 s. As by the work appears;

(33)

2 l. — 17 s. — 1 d.
 20
 17
 4

57 Shillings.

12

115

57

685 Pence.

324

2740

370

2055

228940

xxxx

10516

(1 s.

xx1940 (18405

(1. 10 s. d.

xxxxxx

924 — 15 — 0

xxxx

So that 324 l. being forborne 18 years, will amount unto 924 l. 15 s.

By the Decimal part thus.

The Decimal part against 18 years, is 2.85434. which multiplied by 324 l. produces this number,

D

ber,

ber, 92480616, from which cutting off 5 figures towards the right hand, and there is 924 *l.* and 80616 parts, which reduced, makes 16 *s.* 1 *d.* 2 *q.* in all, 924 *l.* 16 *s.* 1 *d.* 2 *q.* And so much will 324 *l.* be increased unto in 18 years, as by the work appears.

2.8	5	4	3	4					
			3	2	4				
<hr/>									
1	1	4	1	7	3	6	<i>l.</i>	<i>s.</i>	<i>d.</i> <i>q.</i>
5	7	0	8	6	8		924	—	16
8	5	6	3	0	2			—	1
<hr/>									
9	2	4	8	0	6	1	6		

This differs from the Vulgar 1 *s.* 1 *d.* 2 *q.* which difference doth arise for that the Decimal fraction 2.85434 did amount to something more than 2 *l.* 17 *s.* 1 *d.* by about one tenth of a farthing.

Question III.

*If 136 *l.* 15 *s.* 6 *d.* should be forborne the term of 20 years, what would it amount unto at the end of that term, at 6 per Cent.*

I. By Vulgar Arithmetick.

The number in the Table standing against 20 years, is 3 *l.* 4 *s.* 1 *d.* 3 *q.* which reduced into farthings, makes 3079 farthings. Also reduce 136 *l.* 15 *s.* 6 *d.* (the sum forborne) into pence, and it maketh 32826 pence. Multiply 32826 pence, by 3079.

3079 q. the product will be 101071254, this divided by 240 (the number of pence in 1 l. or 20 s.) giveth in the Quotient 421130 pence, which reduced into pounds, giveth 438 l. 13 s. 6 d. 2 q. As by the operation appears.

l.	l.	s.	d.	q.	l.	s.	d.
1	3	4	1	3	136	15	6
240	20				20		
	64	Shil.			2735	Shil.	
	12				12		
	129				5476		
	64				2735		
	769	Pence.			32826	Pence.	
	4				3079		
	3079	Farth.			295434		
					229782		
					984780		

101071254

x x x	q.	x x x	d.
25237	31(2	2084(6	1(1
1110712(54	(221130	(105282	(877 3(438
24444440	(444444	12222	222 0
22222		111	

438 l. — 13 s. — 6 d. — 2 q.

1794. Here is a great deal of work in doing of this
(by Vulgar Arithmetick. If you please, I will see
whether I can do it in Decimals, you shall be

2A **Action.** Willing to give about 100 pounds

Inq. Then I begin thus. The Decimal against 20 years in the Table, is 3. 20713, then to bring 136 l. 15 s. 6 d. into a Decimal, I first set down 136 with a prick after it, then for the 15 s. I set down 7 after the prick; then I look in my Table of Reduction for 6 d. against which I find 250, to which I add 500 for the odd shilling (for 7 signifies but 6) and it makes 750 (or omitting the Cypher) 75. So is my decimal part for 136 l. 15 s. 6 d. 136.775, by which I multiply 3. 20713, and the product is 48863520575, from which I cut off 8 figures towards the right hand (because in the multiplicand, namely in 3. 20713, there are 5 figures after the prick, and in the multiplier 136.775, there are 3 figures after the prick, which together are 8 figures.) So I have 4386 and 655 remain, for the 655 I set down 12 s. but 5 following it, I set down 130. so there is remaining 055, which in my Table of Reduction is in value equal to 1 d. 1 q. so that my Decimal thus reduced is 438 l. 13 s. 1 d. 1 q. And so much will 136 l. 15 s. 6 d. amount unto, if forborn 20 years, which differs from the former by Vulgar Arithmetick only 5 d. 1 q.

(87)

$$\begin{array}{r} 13.207.3 \\ 12186775 \\ \hline 1603565 \\ 2244991 \\ 2244991 \\ 1924278 \\ 96239 \\ \hline 32073 \end{array}$$

438.655.20575

438 *l.* — 13 *s.* — 1 *d.* — 1 *q.*

Ration. You have resolved this Question in the Decimal way so exactly in every particular thereof, that I think you able to resolve any other; wherefore in those which follow we will omit the Arithmetical work, being you already so well understand it.

Dir. I think Sir you may save that labour, for what is hitherto done I perfectly understand.

Ration. Well then I will proceed to another of your Questions.

Question I. What Sum must that be, which if it be

forborne 5 years, will amount or be increased to 50 *l.*
 The Sum which 1 *l.* will amount unto in 5 years, is
 1 *l.* 6 *s.* 9 *d.* which reduced into pence, is 321 *d.* then
 reduce 50 *l.* into pence also, and it makes 12000 *d.*
 Divide 12000 by 321, and you shall have in the Quo-

D 3

tient 37 *l.* and $\frac{12}{31}$ parts of a pound, which reduced, is 7 *s.* 8 *d.* *ferè.* And that sum 37 *l.* 7 *s.* 8 *d.* being forborne 5 years, will amount to 50 *l.*

By Decimals it is thus done.

To 50 *l.* add what number of Cyphers you please, as 9, making it 50.00000000. divide this number by 1.33822, the Decimal standing against 5 years, and you shall have in your Quotient 37.3835, which reduced, is 37 *l.* 7 *s.* 8 *d.* as before.

Question V.

*A Father dying, leaves in the hands of a friend 235 *l.* as a Portion for his Son, when he comes of Age (who wants 13 years of 21) to receive the Stock and Profit thereof after the rate of 6 per cent. Compound Interest; what Sum of Money must the Orphan receive at the Age of 21 years?*

In the Table against 13 years, you shall find 2 *l.* 2 *s.* 7 *d.* 3 *q.* which reduced into farthings, is 2044, which multiplied by 235, produceth 480340 farthings, which reduced is 500 *l.* 7 *s.* 1 *d.*

By Decimals.

Multiply 2.13292, the Decimal belonging to 13 years, by 325 (the Portion) and the Product, is 501.23620, which is 501 *l.* 4 *s.* 8 *d.* 2 *q.* and so much must the Orphan receive when he comes of Age.

Inq. This differs very much from the former, namely 17 *s.* 7 *d.* 2 *q.*

Ration. This difference ariseth from the parts of a farthing in the Decimal; for the Decimal 2.13292 is in strictness 2 *l.* 2 *s.* 7 *d.* 3 *q.* $\frac{1}{2}$ farthing, or thereabout, which will make up the 17 *s.* 7 *d.* 2 *q.* but no nearer number could be set in the Table. *Quest.*

Question VI.

*What will 100 l. amount unto, if it be forborne
5 years and 3 months?*

In the Solution of this and the like Questions, there is something more trouble than in the former, in respect of the parts of a year. Wherefore in this or the like Questions, take the Decimal for the longest term allowed (as here for 5 years) which is 1.33822, this multiply by the principal lent, (namely 100 l.) and it makes 1.3382200, (but you may omit the two Cyphers, and cut off two figures less,) this multiply by 1.01467, the Decimal for 3 months, and it produceth 135.7851687400, from which ten figures being cut off, (or 8 figures besides the two Cyphers) there is left 135 l. and 7851 l. part of a pound, which is 5 s. 8 d. 1 q. So that the increase of 100 l. in 5 years and a quarter will amount unto 135 l. 15 s. 8 d. 1 q.

The Work in Decimals

$$\begin{array}{r}
 1.3382200 \\
 1.01467 \\
 \hline
 93675400 \\
 80293200 \\
 53528800 \\
 13382200 \\
 133822000 \\
 \hline
 135.7851687400 \\
 \hline
 135 \text{ l.} - 15 \text{ s.} - 8 \text{ d.} - 1 \text{ q.} \\
 \text{D 4}
 \end{array}$$

Inq.

Inq. There is much more work in this, than in any of the other before-going; but I perceive it is occasioned by the odd 3 months.

Ration. It is so indeed, and the more parts of a year you have, the more Multiplication you will have, as you shall see in the next of your Questions, which is all that concerns this First Table.

Question VII.

Unto what will 532 l. amount, if it be forborne 12 years, 5 months, and 1 week?

Take the Decimal belonging to the longest time, namely 12 years, which is 2.01219, which multiply by 532 the principal Sum, and it produceth 1070.48500, the increase of 532 l. in 12 years; Then multiply this increase by 1.02457, (the Decimal belonging to 5 months) and it produceth 1069.7868984156, the increase of 532 l. for 12 years and 5 months. Again, multiply this increase by 1.00112 (the Decimal belonging to 1 Week) & it produceth 1098.015299741825472, which is the increase of 532 l. for 12 years, 5 months, and one week, which reduced is 1098 l. 0 s. 3 d. 3 q.

The

(41)

The Arithmetical Work,

2.01219

532

402438

603657

1006095

For 1070.48508—12 Years,

1.02457

749339556

535242540

428194032

214097016

1070485080

For 1096.7868984156 { 12 Years.

1.00112 { 5 Months.

21935737968312

10967868984156

10967868984156

1096786898415600

F.1098.015299741825472

{ 12 Years.

{ 5 Months.

{ 1 Week.

Ration. Thus have you an answer of all your Questions that are resolvable by my first Table; I will now come to those appertaining to the Second.

The

The second Table.

Declaring what any Sum of Money, being for-
born any number of Dayes, Weeks, Moneths, or
Years, under 31. is worth in ready money,
rebating or discounting yearly after the rate
of 6 per Cent. per An Compound Interest.

l. s. d. q.					Decimal parts.	l. s. d. q.					Decimal parts.
Dayes.						1	0	18	10	2	.94139
						2	0	17	9	2	.88997
						3	0	16	9	2	.83961
1	0	19	11	3	.99984	4	0	15	10	0	.79101
2	0	19	11	3	.99968	5	0	14	11	1	.74716
3	0	19	11	3	.99952	6	0	14	1	1	.70496
4	0	19	11	3	.99936	7	0	13	3	2	.66506
5	0	19	11	3	.99920	8	0	12	6	2	.62741
6	0	19	11	3	.99904	9	0	11	10	0	.59190
Weeks.						10	0	11	2	0	.55839
						11	0	10	6	2	.52671
1	0	19	11	3	.99888	12	0	9	11	1	.49697
2	0	19	11	2	.99776	13	0	9	4	2	.46884
3	0	19	11	1	.99665	14	0	8	10	0	.44230
Moneths.						15	0	8	4	1	.41716
						16	0	7	10	2	.39365
						17	0	7	5	0	.37136
1	0	19	10	3	.99815	18	0	7	0	0	.35014
2	0	19	9	2	.99733	19	0	6	7	1	.33051
3	0	19	8	2	.98553	20	0	6	2	3	.31180
4	0	19	7	1	.98076	21	0	5	10	2	.29415
5	0	19	6	1	.97601	22	0	5	6	2	.27710
6	0	19	5	0	.97128	23	0	5	2	3	.26180
7	0	19	4	0	.96658	24	0	4	11	1	.24638
8	0	19	2	3	.96186	25	0	4	7	3	.23307
9	0	19	1	3	.95714	26	0	4	4	3	.21981
10	0	19	0	2	.95264	27	0	4	1	3	.20737
11	0	18	11	2	.94799	28	0	3	11	0	.19561
						29	0	3	9	1	.18451
						30	0	3	5	3	.17411



A Description of this T A B L E.

Ration. **T**His Table consisteth of the same parts as did the former, viz. of *Dayes, Weeks, Months, and Years*, and the Sums of Money, and Decimal parts, have the like use, they differing only in this, That the other shewed, *what One Pound being forborne any number of Dayes, Weeks, Months, or Years, would be augmented or increased unto*; This shews, *what One Pound becoming due any Dayes, Weeks, Months or Years to some, is worth in ready money.*

As the first Table shews, One Pound now due being forborn a year, would increase to 1 *l.* 1 *s.* 2 *d.* 2 *q.* So this shews, that if one pound or 20 *s.* becoming due a year hence, will be worth now in ready money 18 *s.* 10 *d.* 2 *q.*

Inq. This Description is sufficient, and I well apprehend it.

Disif. So do I, but how is it framed?

Ration. That I will now declare.

The Construction of this T A B L E.

Ration. In the former Table I gave you the Analogue or Proportion both in Vulgar and Decimal numbers; but (you understanding the difference so well by what hath been delivered so largely in the former,) I count it unnecessary to declare them both again in this place; wherefore let it

satisf-

tisfie that I shew how it is to be done for the Decimal parts only.

Ditif. That will be sufficient, for if one be understood, the other will be obviours.

Ration. Then the Analogie or Proportion, by which this Table is composd, is as followeth, which is the converse of the former, *viz.*

As 106 *l.* which is 100 *l.* and its Interest due at a years end

Is to 100 *l.* the principal present;

So is 1 *l.* (or 1 with 5 Cyphers) 1.00000

To .94339 the Decimal part belonging to 1 year, the interest rebated.

To work it, set you number thus.

106 *l.* — 100 *l.* — 1.00000. to what?

Multiply 1.00000 by 100, (which is done by adding two Cyphers to it,) then it is, 1.000000, which divide by 106, and in the Quotient you shall have .94339 $\frac{6}{100}$ the worth of one pound due a year hence in ready money, and is the number standing against 1 year in the Table.

```

      x x
      x 4 0 (6
x 4 6 6 2 2 6 (9 4 3 3 9
x. 0 0 0 0 0 0 0 0
x 0 0 0 0 0 0
x 0 0 0 0
x x x

```

Then

Then for the second year say,

As 106

Is to .94339 the first years decrease is

So is 100.

To .88999. the second years decrease.

As 106 — .94339 — 100

100

9433960

8 4 3 3 8 8 8 (.8 8 9 9 9

2 6 6 6 6

X O O O O

Y Y Y

And so of all the rest.

Inq. This is sufficient, and the reason of the Construction is very apparent.

Disif. The Composition of these two Tables being so like, there is sure no great difference in their use of this more than in the other.

Ration. Very little or none, as by your Questions answering will appear, which now we will fall to.

Questions resolved by the Second TABLE.

Inq. Before you begin Sir, it will be necessary to answer the Questions in one kind of numbers, either
Vulgar

Vulgar or Decimal, which you please; and for ease and exactness, I should rather chuse the later.

Diris. The Decimal parts are far more convenient in every respect.

Ration. I will keep to those only then.

Question IX.

What is 356 l. due at the end of 7 years, Worth in ready money, rebating or discounting after 6 per Cent. Compound Interest?

The Decimal standing against 7 years, is .66506, which multiply by 356 the principal Sum, the product will be 236.76136, which reduced into Coins Sterling, is 236 l. 15 s. 2 d. 3 q. and so much is 356 l. payable at the end of 7 years worth in present money.

The Work in Decimals.

.66506

356

399036

332530

199518

236.76136 Or 236 l. 15 s. 2 d. 3 q.

Question X.

If 536 l. 12 s. 9 d. be due at 9 months, what is it worth in ready money, rebating after 6 per Cent. Compound interest?

First reduce 536 l. 12 s. 9 d. into a Decimal Fraction or Part, thus. For the 536 l. set down

536,

536, and for your 12 s. set down 6, then look in your Table of Reduction for 9 d. against which stands 375, these set together make 536.6357 the Decimal part of 536 l. 12 s. 9 d. multiply this by .95724, the Decimal part belonging to 9 months, and the product will be 513.689157468, from which cut off 9 figures, and there will be 513 l. and 689157468 parts, which reduced is 513 l. 13 s. 11 d. 3 q. and so much is 536 l. 12 s. 9 d. payable 9 months hence; worth in present money, 536.6357 Decimal of 536 l. 12 s. 9 d.

.95724

21465428

10732714

37564499

26831785

48297213

513.689157468 Or, 513 l. 13 s. 11 d. 3 q.

Question Xiv. of value.

There is a Lease in Mortgage for 5 years, which (were the Mortgage off) is really worth 950 l. What is the reversion thereof worth in present money?

Inq. This (I conceive) is no other than if the Question were thus stated. What is 950 l. due 5 years hence worth in ready money?

Reason. It is the same, and must be answered by the same Table, and the same way of working.

Inq. Then I will see if I can resolve it by your Table. And first, I seek the Decimal for 5 years, which

which is .74726, which I multiply by 950 l. the value of the Lease, and it produceth 709.89700, from which cut off 5 figures, and there will be 709 l. and .89700 remaining, which reduced is 17 s. 11 d. 19. in all 709 l. 17 s. 11 d. 19. And so much is the Lease in reversion worth in ready money.

74726
950

3736300

672534

709.89700

709 l. — 17 s. — 11 d. — 19.

Question XII.

There is a Legacie of 200 l. to be paid in a years time, at four equal payments; namely 50 l. at 3 months, 50 l. more at 6 months, a third 50 l. at 9 months, and the fourth and last 50 l. at a year. The Legatee desires to have all his money presently, and is willing to discount therefore after the rate of 6 per Cent. Compound Interest; what present money must he receive in full satisfaction of his Legacie.

For the solution of this, take the Decimal of 3 months, which is .98553, and multiply it by 50 l. the first payment due at 3 months, and it makes 49.27650, which set down by it self, as here you see done, and the value thereof in money by it, which is 49 l. 5 s. 6 d. 19. — Then take the Decimal for 6 months, which is .97128, and multiply

multiply that by 50 *l.* the second payment at 6 months, and it maketh 48.56400, which reduced is 48 *l.* 11 *s.* 3 *d.* 2 *q.* Set this down under the former.

		<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
3 Months.	49.27650	49	5	6	1
6 Months.	48.56400	48	11	3	2
9 Months.	47.86200	47	17	3	0
A Year.	47.16950	47	3	4	3
<hr/>		<hr/>			
	192.87200	192	17	5	2
<hr/>		<hr/>			

Thirdly, Take the Decimal belonging to 9 months, viz. .95724, and multiply it by 50, the third payment, it produceth 47.86200, which reduced is 47 *l.* 17 *s.* 3 *d.* which set down also. Lastly, Multiply .94339 the Decimal for a year, by 50, the last payment, and it giveth 47.16950, which in money is 47 *l.* 3 *s.* 4 *d.* 3 *q.* Set this to the rest, and add them together, and the Sum of all will be 192 *l.* 17 *s.* 5 *d.* 2 *q.* and so much will discharge the Legacie at one entire payment.

If you add all the Decimal parts together, the Sum of them is 192.87200, which reduced, is 192 *l.* 17 *s.* 5 *d.* 2 *q.* *ferè*:

The Third TABLE, SHEWING

What an Annuity, Rent, or Pension, to be paid
yearly, will amount unto, the same be-
ing forborn any number of Years
under 31, at 6 per Cent. per
Ann. Compound Interest.

Years	l.	s.	d.	q.	Decimal parts.	Years	l.	s.	d.	q.	Decimal parts.
1	1	0	0	0	1.00000	16	25	13	5	2	25.67212
2	1	1	2	2	2.06000	17	28	4	3	0	28.21187
3	3	3	8	0	3.18360	18	30	18	1	1	30.90165
4	4	7	5	3	4.37461	19	33	15	2	1	33.75999
5	5	12	8	3	5.63709	20	36	15	8	2	36.78559
6	6	19	6	7	6.97532	21	39	19	10	1	39.99172
7	8	7	10	2	8.39384	22	43	7	10	0	43.32128
8	9	17	11	2	9.89747	23	46	19	11	0	46.99582
9	11	9	10	0	11.49132	24	50	16	3	3	50.81557
10	13	3	7	1	13.18079	25	54	17	3	2	54.86451
11	14	19	5	1	14.97164	26	59	3	1	2	59.15638
12	16	17	4	3	16.86994	27	60	14	1	1	60.70576
13	18	17	7	2	18.88214	28	68	10	6	3	68.5289
14	21	0	3	2	21.01505	29	73	12	9	2	73.6397
15	23	5	6	1	23.27596	30	79	1	1	3	79.05318

A Description of this, and the following
T A B L E S.

Ration. **T**HE three Tables following are not calculated to Dayes, Weeks, Months, and Years, as were the two former, but to Years only; beginning at 1 Year, and so continuing to 31 Years, having the Vulgar numbers of Pounds, Shillings and Pence in one Column, and the Decimal parts answerable thereunto in the next Column adjoyning.

And as the first Table shewed what any Sum of money being forborn any number of Years, would increase unto in that time; This shews, *what any Annuity, Rent, Pension, &c. being forborn any number of Years, will amount unto.*

Inquit. Concerning the Description of these Tables, I am satisfied; but how are they made?

Of the Construction of these T A B L E S.

Ration. Concerning the Construction of this, and the following Tables, I shall say little, they being not composed by any general Analogie (as the other were) but derivative from them, as by the Tables themselves, and the uses to which they are applyed, you may easily discover: wherefore waving the Construction, I will now shew the use of them in resolving your Questions: and those relating to this third Table, are these following.

*Questions Resolved by the Third TABLE.**Question XIII.*

If an Annuity of 20 l. payable Yearly, be forborn the term of 12 Years, what Will it augment unto in all that time, counting Interest upon Interest at 6 per Cent.

Multiply 16.86994 (the Decimal standing against 12 Years) by 20 l. the yearly revenue, and it produceth 337.39880, which reduced is 337 l. 11 s. 3 q. and to so much will the Annuity be increased to, it being the whole term of 12 Years forborn.

Question XIV.

If an Annuity or Rent of 7 l. 6 s. 3 d. so be paid yearly, be in arrear, or unpaid, for 8 years, unto what will it be increased in that time, counting Interest upon Interest at 6 per Cent.

Reduce the 7 l. 6 s. 3 d. into a Decimal, it maketh 7.3125, by this Decimal part multiply 9.89747 the Decimal standing against 8 years, and the product will be 72.375249375, which Decimal reduced (nine figures being first cut off) is equal to 72 l. 7 s. 6 d. and to so much will the Rent of 7 l. 6 s. 3 d. be increased, if forborn 8 years.

72.375249375

Question

Question XV.

A to pay unto B a Legacie of 280 l. entire, at expiration of 4 years. A supposing himself not to be in a capacity of paying so great a Sum, agrees to assign unto B, a Lease of 65 l. a year, till the said term of 4 years were expired, in full satisfaction of the 280 l. A was then to pay unto B: what he gained, or lost by this bargain? and what?

Seek in the Table for the Decimal belonging to 4 years (the time the Legacie is to be paid at, and to the time that the Lease is assigned for) and you shall find it to be 4.37461, which multiply by 65 (the annual Rent that B was to receive for 4 years) and the product is 284.34965, which reduced into money, is 284 l. 7 s. 7 d.; from which subtracted 280 l. the remainder is 4 l. 7 s. So that A gained of 4 l. 7 s. by the bargain.

The Fourth TABLE

SHEWING

What any Annuity, Rent, or Pension, being for
born any number of years under 31, Rebating
or Discounting yearly after the rate
of 6 per Cent. Compound In-
terest, is worth in Ready
Money.

Year	l.	s.	d.	q.	Decimal part.	Year	l.	s.	d.	q.	Decimal part.
1	0	18	10	2	0.94340	16	10	2	1	1	10.10589
2	1	16	8	0	1.83339	17	10	9	6	2	10.47725
3	2	13	5	2	2.67301	18	11	16	6	2	10.82760
4	3	9	3	2	3.46510	19	11	3	2	0	11.15811
5	4	4	3	0	4.21236	20	11	9	4	3	11.46992
6	4	18	4	1	4.91732	21	12	15	3	1	11.76405
7	5	11	7	3	5.58238	22	12	0	10	0	12.04158
8	6	4	2	1	6.20979	23	12	6	0	3	12.30317
9	6	16	0	1	6.80169	24	12	11	0	0	12.55035
10	7	7	2	1	7.36008	25	13	15	8	0	12.78335
11	7	17	8	3	7.88687	26	13	0	0	3	13.00316
12	8	7	8	0	8.38384	27	13	4	2	2	13.21053
13	8	17	0	2	8.85268	28	13	8	1	2	13.40616
14	9	5	1	3	9.29498	29	13	11	9	3	13.59071
15	9	14	3	0	9.71224	30	13	15	3	2	13.76483

*Questions Resolved by the Fourth T A B L E.**Question XVI.*

What is the Lease of an Annual Rent of 25 l. payable yearly for 21 years to come, worth in present money, at 6 per Cent.

Look in the Table for the Decimal part belonging to 21 years, which is 11.76405, which multiply by 25 l. the Annual Rent, the product thereof is 294.07625, which reduced into money is 294 l. 1 s. 6 d. 1 q. and so much is the Lease worth in present money.

Question XVII.

What is an Annuity, Rent, or Pension, of 75 l. per an. payable yearly for 30 years to come, worth in present money?

The Decimal belonging to 30 years is 13.76482; this multiplied by 75 l. the Annual Rent, yieldeth in the product 1032.36150, from which, five figures being cut off, and the Decimal reduced, giveth 1032 l. 7 s. 2 d. 3 q. and so much is the Lease or Annuity of 75 l. for 30 years, worth in ready money.

13.76482

75

6882410

9635374

1032.36150

Or 1032 l. 7 s. 2 d. 3 q.

E 4

Quest.

Question XVIII.

A hath a Lease of a house of 75 *l.* a year, to be paid yearly, he desires to borrow of his Tenant in possession so much money as will countervalue his Rent for 5 years, and for it he will allow him after the rate of 6 per Cent. Compound Interest, what Sum of money must he receive for his 5 years?

Look in the Table for the Decimal belonging to 5 years, which is 4.21236, which multiply by 75 *l.* the Annual Rent, and the product will be 315.92700, which reduced is 315 *l.* 18 *s.* 6 *d.* 2 *q.* and so much money may he lend him to countervalue his 5 years, and he have 6 *l.* per Cent. Compound Interest for his money all that time.

$$\begin{array}{r}
 4.21236 \\
 \times 75 \\
 \hline
 2106180 \\
 2948652 \\
 \hline
 31592700
 \end{array}$$

Question XIX.

A Tenant hath a Lease of a house for 30 years, for the first 10 years he is to pay 15 *l.* a year, and for the remaining 20 years, he is to pay 20 *l.* a year; what is this Lease worth in ready money discounting Interest at 6 per Cent.

Look in the Table for the Decimal belonging to 30 years, which is 13.76482, which multiply by 20 *l.*

20l. (the Annual Rent for the whole time) the product is 271.81420, which reduced, is 271 l. 16 s. 3 d. 2 q. and so much had the Lease been worth for the whole term of 30 years at 20 l. per annum.

But forasmuch as the first 10 years of the 30, pays but 15 l. a year, which is 5 l. less, therefore look the Decimal belonging to 10 years, which is 7.36008, and multiply it by 5 l. (the abatement of the first 10 years Rent) and the product will be 36.80040, which reduced into money is 36 l. 16 s. this subtracted from the former 271 l. 16 s. 3 d. 2 q. leaveth 235 l. 0 s. 3 d. 2 q. and so much is the Lease worth in present money.

13.59071	7.36008		
20	5		
<hr/>	<hr/>		
271 81420	36.80040		
l. s. d. q.	l. s. d. q.		
271 16 3 2	36. 16 0 0		
l.	s.	d.	q.
271	16	3	2
36	16	0	0
<hr/>			
235	00	3	2

Question XX.

If a Lease for 21 years be to be let for 30 l. a year and 100 l. Fine; What Fine must be given to bring the Rent down to 10 l. a year, Rebating after the rate of 6 per Cent.

The

The difference between the Rent demanded (*viz.* 30 *l.*) and the Rent desired (*viz.* 10 *l.*) is 20 *l.*

Find therefore what 20 *l.* a year for 21 years is worth in present money, which to do, multiply 11.76405 (the Decimal belonging to 21 years) by 20 *l.* (the Rent to be abated) and the product will be 235.28100, which reduced into money is 235 *l.* 5 *s.* 7 *d.* 2 *q.* and so much is 20 *l.* a year worth in present money; to which add the 100 *l.* Fine demanded, and it makes 335 *l.* 5 *s.* 7 *d.* 2 *q.* and such Fine must be paid to bring the Rent down to 10 *l.* a year for the whole 21 years.

Question XXI.

*Which is worth most in present money, A Lease of 16 *l.* a year to continue 25 years, Or a Lease of 32 *l.* a year to continue 12 years?*

Find in the Table the Decimal belonging to 25 years, which is, 12.78335, which multiply by 16 *l.* the Annual Rent, and it produceth 204.53360, which reduced is 204 *l.* 10 *s.* 8 *d.* The worth of the Lease for 25 years at 16 *l.* a year.

Then for the other Lease of 32 *l.* a year to continue 12 years; Seek the Decimal belonging to 12 years, which is 8.38384, and multiply it by 32 the Annual Rent, it produceth 268.28288, which reduced is 268 *l.* 5 *s.* 7 *d.* 3 *q.* the true worth of the Lease of 32 *l.* a year for 12 years. As by the work appears.

(59)

12.78335

16

8.38384

32

7670010

1278335

1676768

2515152

204.53360

268.28288

l. s. d. q.

204 10 8 0

l. s. d. q.

268 5 7 3

Worth of a Lease of 32 *l.* } *l. s. d. q.*
for 12 years ——— } 268 5 7 3

Worth of a Lease of 16 *l.* } *l. s. d. q.*
for 25 years ——— } 204 10 8 0

The difference 63 14 11 3

The

The Fifth TABLE.

SHEWETH

What Annuity, Rent, or Pension, payable yearly, any Sum of Money will purchase for any number of years under 31, accounting Interest upon Interest at 6 per Cent. per Ann.

Year	l.	s.	d.	q.	Decimal parts.	Year	l.	s.	d.	q.	Decimal parts.
1	1	1	2	2	106000	16	0	1	11	3	.09895
2	0	10	11	0	.54544	17	0	1	10	3	.09544
3	0	7	5	3	.37411	18	0	1	10	1	.09235
4	0	5	9	1	.28659	19	0	1	9	2	.08962
5	0	4	9	0	.23739	20	0	1	8	3	.08718
6	0	4	0	3	.20336	21	0	1	8	1	.08500
7	0	3	7	0	.17913	22	0	1	7	3	.08304
8	0	3	2	2	.16103	23	0	1	7	2	.08137
9	0	2	11	1	.14702	24	0	1	7	1	.07967
10	0	2	8	2	.13586	25	0	1	6	3	.07822
11	0	2	6	2	.12679	26	0	1	6	2	.07690
12	0	2	4	3	.11926	27	0	1	6	1	.07569
13	0	2	3	0	.11297	28	0	1	6	0	.07452
14	0	2	1	3	.10758	29	0	1	5	3	.07357
15	0	2	0	3	.10296	30	0	1	5	2	.07264

Quest.

*Questions Resolved by the Fifth TABLE.**Question XXII.*

*What Rent or Annuity to begin presently, and to continue 28 years, will 640*l.* purchase, accounting Compound Interest after 6 per Cent.*

Look in your Table for the Decimal belonging to 28 years (the time of the continuance of the Annuity) which you shall find to be .07459, multiply this Decimal by 240*l.* (the money to be laid out upon the purchase) and the product will be 47.73760, which reduced, maketh in money 47*l.* 14*s.* 9*d.* and such an Annuity or Rent will 640*l.* purchase for 28 years.

Question XXIII.

*What Rent or Annuity will 532*l.* 16*s.* 8*d.* purchase presently, and to continue for 11 years, allowing 6 per Cent Compound Interest?*

Look in the Table for 11 years, the Decimal thereunto belonging is .12679, then reduce your 532*l.* 16*s.* 8*d.* into a Decimal, and it is 532.8333, which multiply by .12679 (the Decimal belonging to 11 years) and the product will be 67.557934107, from which cut off 9 figures, and reduce the Decimal into money, and it will be 67*l.* 11*s.* 1*d.* 3*q.* and such a Rent or Annuity will 532*l.* 16*s.* 8*d.* purchase for 11 years.

$$\begin{array}{r}
 532.8333 \\
 \times .12679 \\
 \hline
 47954997 \\
 37298331 \\
 31969998 \\
 10656666 \\
 5328333 \\
 \hline
 67.557934107
 \end{array}$$

Quest.

Question XXIV.

There was 120 l. Fine, and 10 l. a Year, given for the Lease of a House for 13 years; What was the value of the yearly Rent rated at, money being at 6 per Cent.

You must first find what Annuity 120 l. will purchase for 13 years, which you may find by multiplying .11297 (the Decimal belonging to 13 years) by 120 l. (the Fine,) the product whereof will be 13.55640, which reduced is 13 l. 11 s. 1 d. 2 q. and such an Annuity or Rent will 120 l. purchase, to which the 10 l. a year which was Annually paid, being added, it makes 23 l. 11 s. 1 d. 2 q. and such Annual Rent doth it stand the Lessee in for his 13 years.

Question XXV.

There is 250 l. Fine, and 20 l. a Year required for a Lease of a House for 21 years. The Tenant is willing to give 100 l. Fine, and an increase of Rent answerable to the abatement of the Fine, What Rent must be advanced, and what Rent must be pay in all?

First find what Annuity 250 l. will purchase for 21 years, by multiplying .08500 (the Decimal belonging to 21 years) by 250 l. (the Fine demanded) and it makes 21.25000, which reduced is 21 l. 5 s. to which add 20 l. the Annual Rent, and it maketh 41 l. 5 s. a year, the worth of the house yearly without a Fine.

Then for the 100 l. which the Tenant is willing to pay, what Rent must be deducted for that? find there-

therefore what Annuity to continue 21 years, 100 *l.* will purchase; multiply .08500 (the Decimal belonging to 21 years) by 100 *l.* (the Fine offered) and it makes 0850000, from which cut off 5 figures, and there is 0850000, which reduced is 8 *l.* 10 *s.* wherefore take 8 *l.* 10 *s.* out of 41 *l.* 5 *s.* the full Rent without a Fine, and there will remain 32 *l.* 15 *s.* and so much Annual Rent must he pay besides his 100 *l.* Fine.

Inq. I conceive Sir that this might have been answered at one working in this manner.

Subtract 100 *l.* (the Fine offered) from 250 *l.* (the Fine demanded) the difference is 150 *l.* then find what Annuity 150 *l.* will purchase for 21 years, by multiplying .08500 (the Decimal of 21 years) by 150 *l.* (the difference of the Fines) and it makes 12.75000, which reduced is 12 *l.* 15 *s.* this added to the 20 *l.* Rent demanded, makes 32 *l.* 15 *s.* exactly agreeing with yours, and I think the work somewhat shorter.

Ration. You have well considered the nature of the Question, and wrought it the nearest way, and seeing you are so perfect, and all your Questions being at an end, I think it time to break off.

Inq. Of what singular use and benefit are Tables to most men; but for those that understand not Arithmetick, they will appear difficult: wherefore if the Arithmetical work might be reduced to some easie form, they would then be much more advantageous.

Ration. For that, See here is a Large Table ready calculated; that he that can but Add and Subtract, may perform any of the Arithmetical work.

Inq.

Inq. That some such a Table will render the work very easie.

Ration. This is the Table.

Disif. Sir I thank you for the great pains you have taken in giving us such ample satisfaction in all our demands; but how to make you amends, is below us.

Ration. For that benefit which you have received I am satisfied, and if you have got any advantage, is all the end I had in the composing of this Work.

A Large
T A B L E
O F
MULTIPLICATION,

Calculated and Explained for the
easie performing of the Arithmetical Work in
this Discourse, by Such as are not so ready at
the Rules of Arithmetick as this Treatise re-
quires.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100
11	22	33	44	55	66	77	88	99	110
12	24	36	48	60	72	84	96	108	120
13	26	39	52	65	78	91	104	117	130
14	28	42	56	70	84	98	112	126	140
15	30	45	60	75	90	105	120	135	150
16	32	48	64	80	96	112	128	144	160
17	34	51	68	85	102	119	136	153	170
18	36	54	72	90	108	125	144	162	180
19	38	57	76	95	114	132	152	171	190
20	40	60	80	100	120	139	160	180	200
21	42	63	84	105	126	146	168	189	210
22	44	66	88	110	132	153	176	198	220
23	46	69	92	115	138	160	184	207	230
24	48	72	96	120	144	168	192	216	240
25	50	75	100	125	150	175	200	225	250
26	52	78	104	130	156	182	208	234	260
27	54	81	108	135	162	189	216	243	270
28	56	84	112	140	168	196	224	252	280
29	58	87	116	145	174	203	232	261	290
30	60	90	120	150	180	210	240	270	300
31	62	93	124	155	186	217	248	279	310
32	64	96	128	160	192	224	256	288	320
33	66	99	132	165	198	231	264	297	330

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

34	68	102	136	170	204	238	272	306	340
35	70	105	140	175	210	245	280	315	350
36	72	108	144	180	216	252	288	324	360
37	74	111	148	185	222	255	296	333	370
38	76	114	152	190	228	266	304	342	380
39	78	117	156	195	234	273	312	351	390
40	80	120	160	200	240	280	320	360	400
41	82	123	164	205	246	287	328	369	410
42	84	126	168	210	252	294	336	378	420
43	86	129	172	215	258	301	344	387	430
44	88	132	176	220	264	308	352	396	440
45	90	135	180	225	270	315	360	405	450
46	92	138	184	230	276	322	368	414	460
47	94	141	188	235	282	329	376	423	470
48	96	144	192	240	288	336	384	432	480
49	98	147	196	245	294	343	392	441	490
50	100	150	200	250	300	350	400	450	500
51	102	153	204	255	306	357	408	459	510
52	104	156	208	260	312	364	416	468	520
53	106	159	212	265	318	371	424	477	530
54	108	162	216	270	324	378	432	486	540
55	110	165	220	275	330	385	440	495	550
56	112	168	224	280	336	392	448	504	560
57	114	171	228	285	342	399	456	513	570
58	116	174	232	290	348	406	464	522	580
59	118	177	235	295	354	413	472	531	590
60	120	180	240	300	360	420	480	540	600
61	122	183	244	305	366	427	488	549	610
62	124	186	248	310	372	434	496	558	620
63	126	189	252	315	378	441	504	567	630
64	128	192	256	320	384	448	512	576	640
65	130	195	260	325	390	455	520	585	650
66	132	198	264	330	396	462	528	594	660

1	2	3	4	5	6	7	8	9	10
67	134	201	268	335	402	469	536	603	670
68	136	204	272	340	408	476	544	612	680
69	138	207	276	345	414	483	552	621	690
70	140	210	280	350	420	490	560	630	700
71	142	213	284	355	426	497	568	639	710
72	144	216	288	360	432	504	576	648	720
73	146	219	292	365	438	511	584	657	730
74	148	222	296	370	444	518	592	666	740
75	150	225	300	375	450	525	600	675	750
76	152	228	304	380	456	532	608	684	760
77	154	231	308	385	462	539	616	693	770
78	156	234	312	390	468	546	624	702	780
79	158	237	316	395	474	553	632	711	790
80	160	240	320	400	480	560	640	720	800
81	162	243	324	405	486	567	648	729	810
82	164	246	328	410	492	574	656	738	820
83	166	249	332	415	498	581	664	747	830
84	168	252	336	420	504	588	672	756	840
85	170	255	340	425	510	595	680	765	850
86	172	258	344	430	516	602	688	774	860
87	174	261	348	435	522	609	696	783	870
88	176	264	352	440	528	616	704	792	880
89	178	267	356	445	534	623	712	801	890
90	180	270	360	450	540	630	720	810	900
91	182	273	364	455	546	637	728	819	910
92	184	276	368	460	552	644	736	828	920
93	186	279	372	465	558	651	744	837	930
94	188	282	376	470	564	658	752	846	940
95	190	285	380	475	570	665	760	855	950
96	192	288	384	480	576	672	768	864	960
97	194	291	388	485	582	679	776	873	970
98	196	294	392	490	588	686	784	882	980
99	198	297	396	495	594	693	792	891	990
100	200	300	400	500	600	700	800	900	1000



*A Declaration or Description of the foregoing Table
of Multiplication.*

THE Table consisteth of three Pages, each page containing 10 Rows or Columns, having at the head of each of them these numbers, 1 2 3 4 5 6 7 8 9 10. in larger figures than the rest of the Table.

Moreover, the first Column of the first Page, namely that under the figure 1. begins with 1, and so goes downward by 2, 3, 4, 6, &c. to 33. Then the first Column of the second Page begins where the other ended, namely at 34, and so goes downward by 35, 36, 37, 38, &c. to 66. And the third Page begins 67, and so goes on to 100; and there ends the Table. In all the Pages the first Column is separated from the second by a double Rule or Line; the other nine Columns of the Table begin with the same figure that stands at the top of it, and every number thereof successively encreaseth by the quantity of the figure standing above.

As in the first Page, look in the Column that hath 4 at the top of it, the next figure under the double line and bigger figure is 4 also, the next under is 8, the next 12, the next 16, &c. to the end of the Table, every number exceeding each other 4, answerable to the figure standing above. Likewise those numbers under the figure 5, increase by 5; those under 6, by 6, &c.

Concerning the Fabrick or Construction of this Table.

The Table is made by multiplying any number standing in the first Column of the Table, by any figure standing at the head of the Table:

As for Example.

Suppose I would find what number in the 31 line of the Table stands under 8; if you multiply 31 by 8, you shall find 248, and that number stands under 8 at the top, and against 31 in the side.

In like manner, if you would find what number in the 59 line of the Table stands under 7; if you multiply 59 by 7, it produceth 413, and this number in the second Page of the Table you shall find in the Column under 7, and against 59 in the first Column.

The Use of this Table.

The chief use of this Table is to multiply one number by another, (though it will be serviceable in Division also) and I have inserted it in this place chiefly for the ease and benefit of such, who are not so well acquainted with the Rules of Arithmetick, as the use of this Treatise requires, especially Multiplication, which here is chiefly used; wherefore I have made this Table, and shall render the use of it so easie, that he that cannot (without-book, as we say) tell that 6 times 7 is 42, or 8 times 3 is 24. or any the like, shall (by help of this little Table, and the Instructions hereafter given) be able to multiply any great Sum very truly and

and easily. As by Example shall be made appear.

Example I. *Let it be required to multiply 27 by 4.*

Find 27 in the first Column of the Table (having the figure 1 at the top thereof) then guide your finger or your eye from 27 in the same line that 27 stands in, till you come under the figure 4, and there you shall find 108, and that is the product of 27 multiplied by 4, and so of any other.

Example II. *Multiply 57 by 9.*

Find 57 in the first Column of the Table, (which you will find in the second Page) and right against it (in the same line) under 9, you shall find 513, and so much is 57 multiplied by 9.

Example III. *Multiply 95 by 7.*

Seek 95 in the first Column of the Table, (which you shall find in the third Page under the figure 1) and right against it in the same line, and under 7, you shall find 665, and so much is 95 multiplied by 7, and so of any other.

Example IV. *Let it be required to multiply 327 by 8.*

Set the numbers to be multiplied one under another, as is usuall in Multiplication, and as you see here done. Then make a prick between every second figure, beginning from the right hand towards the left, as here between 2 and 7. then look in your Table for 27 multiplied by 8, and (as before is taught) you

$$\begin{array}{r} 3.27 \\ 8 \\ \hline \end{array}$$

216

24

2616

F 4

shall

shall find 216, which set orderly under the other figures, and under the line. Then find in your Table 8 multiplied by 3, (or 3 by 8, which is all one) and you shall find 24, which set under 216, but two places of figures forwarder towards the left hand, as you see here done, then draw a line under them, and add these two numbers together, and they make 2616, which is the product of 327 multiplied by 8.

Example V. *Multiply 2358 by 6.*

23.58	Set the numbers as here you see. Then look in
6	the Table for 58 multiplied by 6, and
—	you shall find it to be 348, which set
348	down; then look for 23 multiplied
138	by 8, and it is 138, which set under
—	the other, but still two places forwarder;
14148	then draw a line, and add them
	together, and their Sum is 14148,
	which is the product of 2358 multiplied by 6.

Example VI. *Multiply 573024 by 9.*

57.30.24	Set the numbers as is here done, making pricks
9	between every second figure from
—	the left hand; then look in your
216	Table for 24 multiplied by 9, and
270	you shall find it to be 216, which
513	set down; then look 30 multiplied
—	by 9, and you shall find it to be
5137216	270, which set under the other
	two places forwarder; again look
	for 57 multiplied by 9, and it is
	513,

513, which set under the two former, still two places forwarder, as you see in the Example, then draw a line, and add all three numbers together in the same order as they stand, so will the sum of them be 5157216, which is the product of 573024 being multiplied by 9.

Example VII. *Let it be required to multiply*
7493 by 47.

Set down the numbers as before, and as is here done, making a prick between every second figure.

Then repairing to your Table, begin with your first figure towards the right hand, which is here 7. And look what 93 by 7 is, and you shall find it 651, which set down as before; then find what 74 multiplied by 7 is, and you shall find it to be 518, which set down in all respects as before. So have you done with your first figure 7, then for the other figure 4, look what 93 multiplied by 4 is, and you shall find it 372, which set

74.93
47

651
518
372
296

352171

under the two former numbers, with this caution, [that the first figure of your number found in your Table, stand just under the figure by which you multiply, as here you multiply by 4, wherefore, set the first figure of 372 (which is 2) just under 4] Then see what 74 multiplied by 4 is, and you shall find it 296, which set two places forwarder, as in the other Examples; then draw a line, and add the four numbers together in the same order as they stand, so will the sum of them be 352171,
and

and is the product of 7413, being multiplied by 47.

Another manner of Working the former Example.

Set the numbers down as before, making of points between every two figures, and drawing a line under them. Then begin with your first figure 7, and find what 93 by 7 is, which you shall find to be 651, which set down as before,

74-93	then look what 93 multiplied by 4,
47	(your second figure is) and you
651	shall find it 372, which set under the
372	former 651, only one place forward-
518	der. Then go again to your first fi-
296	gure 7, and see what 74 multiplied
352161	by 7 is, which you shall find to be
	518, which set under the other, on-
	ly one place forward. Lastly look
	what 74 multiplied by 4 is, which

you shall find to be 296, which set under still but one place forwarder, then draw a line and add them together, and you shall find their sum to be 352161 equal to the former; and this I think to be the more regular way; And in this manner by this small Table, may the greatest sum that need be, be easily and exactly multiplied, without the least charge to the memory. And thus much for the use of this Table in Multiplication, which was the chief use I intended it for in this place; but many other uses it might be applied to, were it enlarged; but let this suffice in this place. Only I will here insert a large Sum of Multiplication ready wrought both wayes, leaving you to the practice of the like.

and

(75)

and that shall be this 475238 multiplied by
73862.

The First was

$$\begin{array}{r} 47.52.38 \\ 73862 \\ \hline 76 \\ 1044 \\ .94 \\ 228 \\ 312 \\ .282 \\ 304 \\ 416 \\ .376 \\ 114 \\ 156 \\ .141 \\ 266 \\ 364 \\ 329 \\ \hline 35102029156 \end{array}$$

The Second was

$$\begin{array}{r} 47.52.38 \\ 73862 \\ \hline 76 \\ 228 \\ 304 \\ 114 \\ 266 \\ 104 \\ 312 \\ 416 \\ 156 \\ 364 \\ 94 \\ 282 \\ 376 \\ 141 \\ 329 \\ \hline 35102029156 \end{array}$$

Tables

Tables of Simple Interest at 6 *per Cent.* By which the true Interest due upon any Sum of Money from 5 s. to 1000 l. And for any time from one Month to a Year, may be easily discovered. And consequently for a longer or shorter time.

Simple Interest, at

Principal	I Month.				II Months.				III Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	0	1	0	0	0	2	0	0	0	3
10	0	0	0	2	0	0	1	0	0	0	1	2
15	0	0	0	3	0	0	1	2	0	0	2	3
1 l.	0	0	1	0	0	0	2	0	0	0	3	0
2	0	0	2	1	0	0	4	2	0	0	7	0
3	0	0	3	2	0	0	7	0	0	0	10	2
4	0	0	4	3	0	0	9	1	0	1	2	1
5	0	0	6	0	0	1	0	0	0	1	6	0
6	0	0	7	0	0	1	2	0	0	1	9	1
7	0	0	8	1	0	1	4	2	0	2	1	0
8	0	0	9	2	0	1	7	0	0	2	4	2
9	0	0	10	3	0	1	9	2	0	2	8	1
10	0	1	0	0	0	2	0	0	0	3	0	0
20	0	2	0	0	0	4	0	0	0	6	0	0
30	0	3	0	0	0	6	0	0	0	9	0	0
40	0	4	0	0	0	8	0	0	0	12	0	0
50	0	5	0	0	0	10	0	0	0	15	0	0
60	0	6	0	0	0	12	0	0	0	18	0	0
70	0	7	0	0	0	14	0	0	1	1	0	0
80	0	8	0	0	0	16	0	0	1	4	0	0
90	0	9	0	0	0	18	0	0	1	7	0	0
100	0	10	0	0	1	0	0	0	1	10	0	0
200	1	0	0	0	2	0	0	0	3	0	0	0
300	1	10	0	0	3	0	0	0	4	10	0	0
400	2	0	0	0	4	0	0	0	6	0	0	0
500	2	10	0	0	5	0	0	0	7	10	0	0
1000	5	0	0	0	10	0	0	0	15	0	0	0

Tables of Simple Interest at 6 per Cent. By which the true Interest due upon any Sum of Money from 5 s. to 1000 l. And for any time from one Month to a Year, may be easily discovered. And consequently for a longer or shorter time.

6 per Cent. for

Principal	1 V Months.				V Months.				V I Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	1	0	0	0	1	1	0	0	1	2
10	0	0	2	0	0	0	2	2	0	0	3	1
15	0	0	3	0	0	0	4	0	0	0	5	0
1 l.	0	0	4	0	0	0	5	0	0	0	6	0
2	0	0	9	0	0	0	10	2	0	1	2	0
3	0	1	2	0	0	1	5	2	0	1	9	0
4	0	1	7	0	0	1	11	2	0	2	4	2
5	0	2	0	0	0	2	6	0	0	3	0	0
6	0	2	4	0	0	2	11	2	0	3	7	0
7	0	2	9	0	0	3	5	2	0	4	2	0
8	0	3	2	0	0	3	11	2	0	4	9	0
9	0	3	7	0	0	4	5	3	0	5	4	0
10	0	4	0	0	0	5	0	0	0	6	0	0
20	0	8	0	0	0	10	0	0	0	12	0	0
30	0	12	0	0	0	15	0	0	0	18	0	0
40	0	16	0	0	1	0	0	0	1	4	0	0
50	1	0	0	0	1	5	0	0	1	10	0	0
60	1	4	0	0	1	10	0	0	1	16	0	0
70	1	8	0	0	1	15	0	0	2	2	0	0
80	1	12	0	0	2	0	0	0	2	8	0	0
90	1	16	0	0	2	5	0	0	3	14	0	0
100	2	0	0	0	2	10	0	0	3	0	0	0
200	4	0	0	0	5	0	0	0	6	0	0	0
300	6	0	0	0	7	10	0	0	9	0	0	0
400	8	0	0	0	10	0	0	0	12	0	0	0
500	10	0	0	0	12	10	0	0	15	0	0	0
1000	20	0	0	0	25	0	0	0	30	0	0	0

Tables of Simple Interest at 6 per Cent. By which the true Interest due upon any Sum of Money from 5 s. to 1000 l. And for any time from one Month to a Year may be easily discovered. And consequently for a longer or shorter time.

Simple Interest, at

Principal	VII Months.				VIII Months.				IX Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	1	3	0	0	1	0	0	0	2	2
10	0	0	3	2	0	0	4	0	0	0	5	2
15	0	0	5	3	0	0	6	2	0	0	8	0
1 l.	0	0	7	0	0	0	8	0	0	0	10	2
2	0	1	4	1	0	1	6	0	0	1	9	1
3	0	2	0	2	0	2	4	0	0	2	7	3
4	0	2	8	1	0	3	2	0	0	3	6	3
5	0	3	6	0	0	4	0	0	0	4	6	0
6	0	4	2	0	0	4	8	0	0	5	4	2
7	0	4	10	1	0	5	6	0	0	6	3	1
8	0	5	16	2	0	6	4	0	0	7	1	3
9	0	6	2	3	0	7	2	0	0	8	0	3
10	0	7	0	0	0	8	0	0	0	9	0	0
20	0	14	0	0	0	16	0	0	0	18	0	0
30	1	1	0	0	1	4	0	0	1	7	0	0
40	1	8	0	0	1	12	0	0	1	16	0	0
50	1	15	0	0	2	0	0	0	2	5	0	0
60	2	2	0	0	2	8	0	0	2	14	0	0
70	2	9	0	0	2	16	0	0	3	3	0	0
80	2	16	0	0	3	4	0	0	3	12	0	0
90	3	3	0	0	3	12	0	0	4	1	0	0
100	3	10	0	0	4	0	0	0	4	10	0	0
200	7	0	0	0	8	0	0	0	9	0	0	0
300	10	10	0	0	12	0	0	0	13	10	0	0
400	14	0	0	0	16	0	0	0	18	0	0	0
500	17	10	0	0	20	0	0	0	22	10	0	0
1000	35	0	0	0	40	0	0	0	45	0	0	0

Tables of Simple Interest at 6 per Cent. By which the true Interest due upon any Sum of Money from 5 s. to 1000 l. And for any time from one Month to a Year may be easily discovered. And consequently for a longer or shorter time.

6 per Cent. for

Principal	X Months.				X 1 Months.				A Year.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	2	3	0	0	2	3	0	0	3	0
10	0	0	5	1	0	0	5	3	0	0	6	2
15	0	0	8	0	0	0	9	0	0	0	10	0
1 l.	0	0	10	0	0	0	11	0	0	1	2	8
2	0	1	9	0	0	2	0	2	0	2	4	2
3	0	2	11	0	0	3	2	2	0	3	6	3
4	0	3	11	0	0	4	3	0	0	4	9	0
5	0	5	0	0	0	5	6	0	0	5	11	2
6	0	5	11	0	0	6	6	2	0	7	2	1
7	0	6	11	0	0	7	7	2	0	8	4	2
8	0	7	11	0	0	8	8	2	0	9	6	3
9	0	8	11	2	0	9	9	2	0	10	9	0
10	0	10	0	0	0	11	0	0	0	12	0	0
20	1	0	0	0	1	2	0	0	1	4	0	0
30	1	10	0	0	1	13	0	0	1	16	0	0
40	2	0	0	0	2	4	0	0	2	8	0	0
50	2	10	0	0	2	15	0	0	3	0	0	0
60	3	0	0	0	3	6	0	0	3	12	0	0
70	3	10	0	0	3	17	0	0	4	4	0	0
80	4	0	0	0	4	8	0	0	4	19	0	0
90	4	10	0	0	4	19	0	0	5	8	0	0
100	5	0	0	0	5	10	0	0	6	0	0	0
200	10	0	0	0	11	0	0	0	12	0	0	0
300	15	0	0	0	16	10	0	0	18	0	0	0
400	20	0	0	0	22	0	0	0	24	0	0	0
500	25	0	0	0	27	10	0	0	30	0	0	0
1000	50	0	0	0	55	0	0	0	60	0	0	0



A Description of the foregoing Tables of Interest.

THE Tables consist of four pages, each page containing four Columns; the first whereof toward the left hand, contains the Principal money let out, and that from 5 s. to 1000 l. in this order; the first space whereof contains 3 lines only, in which are 5 s. 10 s. 15 s. the second space downwards, begins at 1 l. and so continues by 2, 3, 4, &c. to 9 l. the third space contains nine lines also, and begins at 10 l. and so continues by 20, 30, &c. to 90 l. And the fourth and last space contains six lines, beginning with 100 l. and going on to 200, 300, 400, 500 l. and in the last line of all 1000 l.

Now in the other three Columns you have the Interest that is due upon any Sum of money found in the first Column, either for I, II, or III Moneths; according to the Titles at the head of each Column.

Example.

If you find 100 l. in the first Column, right against it in the second you shall find 0 l. 10 s. 0 d. 0 q. which shews that 100 l. in I Moneth, will yield 10 s. In the second Column against 100 l. you have 1 l. 0 s. 0 d. 0 q. which is the Interest of 100 l. for II Moneths. And in the third Column against 100 l. you have 1 l. 10 s. 0 d. 0 q. which is the Interest of 100 l. in III Moneths, according to the Title over head

And

And note that what is here said of this first Page of the Table, the like is to be understood of the other three, the form and order whereof being the same; and so much for their Description.

The Construction or making of these Tables of Interest.

For the making of these Tables, this is the Analogue or Proportion.

As 100 *l.* forborn any time,
Is to the Interest thereof for that time.
So is any other sum of money forborn any time,
To the Interest of that sum for that time.

Example.

Thus if 100 *l.* yield 6 *l.* Interest in a year, what shall 90 *l.* yield in the same time?

Turn your 6 *l.* into shillings, it makes 120 *s.* then say by the Rule of Three,

If 100 *l.* yield 120 *s.* what will 90 *l.* yield.

$$\begin{array}{r} 90 \\ \hline 10800 \end{array}$$

Multiply 120 by 90, and it produceth 10800, this divide by 100 (which is done by cutting off the two last figures towards the right hand) the Quotient is 108 *s.* which is 5 *l.* 8 *s.* and so much will 90 *l.* yield in 12 months, as by the Tables appear.

Example I I.

But for any other Sum, or any other time, As
If 100 *l.* in 12 months yield 6 *l.* what shall 540 *l.* yield in three months?

G

Set

Set your numbers in order as followeth, and work by the double Rule of Proportion, thus :

If 100 *l.* in 12 months yield 6 *l.* what will 500 *l.* yield in 3 months.

12	3
1200	1500
26	6
90000	6
7 $\frac{6}{12}$ or $\frac{1}{2}$	9000

First multiply 100 *l.* by 12 months, it maketh 1200, which keep, for it must be your divisor. Then multiply 500 *l.* by 3 months, it produceth 1500, which divide by 6 months, it produceth 9000, this divided by 1200, giveth in the Quotient 7 *l.* and 600 remaining, that is $\frac{600}{1000}$ of a *l.* which in lesser terms is $\frac{3}{5}$ or $\frac{1}{2}$ of a *l.* that is 10 *s.* So that if 100 *l.* in 12 months will yield 6 *l.* 500 *l.* in 3 months will yield 7 *l.* 10 *s.* as by the foregoing work you may see, and in the Table find 7 *l.* 10 *s.* under 3 months, to stand against 500 *l.* in the first Column. And thus are these Tables made, and may be by this means made for any sum, and for any time, and Rate of Interest whatsoever. And so let this suffice for the Construction or making of these Tables; Their use follows.

The Use of these Tables.

Question I.

*What is the Interest of 50 *l.* in 9 Months.*

Turn to that Page in the Table which hath IX Months, and look down that Row or Column that hath IX Months at the top of it, till you come against

against 50 *l.* in the first Column, and there you shall find 2 *l.* 5 *s.* 0 *d.* and that is the Interest of 50 *l.* for 9 Months.

Question II.

What will 300 l. yield me being forborne 11 Months?

Turn to the last Page of the Table for XI Months, and look down that Column till you come against 300 *l.* in the first, and there you shall find 16 *l.* 10 *s.* and so much will your 300 *l.* yield in XI Months.

Question III.

What is the Interest of 237 l. in 3 Months?

In your Table you cannot find 237 *l.* in one Sum, wherefore you must take it out at three times, and add them together, and the Sum of them will be the Interest due.

Example.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
The Interest of 200 <i>l.</i> for 3 Months, is	3	0	0
The Interest of 30 <i>l.</i> is	0	9	0
The Interest for 7 <i>l.</i> is	0	2	1

The Sum 3 11 1

Thus the Interest of 200 *l.* taken out of the Table for 3 Months, is 3 *l.* the Interest of 30 *l.* for the same time is 9 *s.* and the Interest for 7 *l.* is 2 *s.* 1 *d.* which added together make 3 *l.* 11 *s.* 1 *d.* and so much will 237 *l.* yield at 3 Months end.

Question IV.

What profit will 1463 l. 15 s. yield in 6 Months at 6 per Cent.

G 2

this

This must be performed much like the last. First look the Interest of 1000 *l.* for 6 Months, which you shall find to be 30 *l.* which set down, then 400 *l.* then 60 *l.* then 3 *l.* and lastly 15 *s.* as here you see.

	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
1000 <i>l.</i> For 6 Months —————	30	0	0	0
400 For 6 Months —————	12	0	0	0
60 For 6 Months —————	1	16	0	0
3 For 6 Months —————	0	1	9	0
15 <i>s.</i> For 6 Months —————	0	0	3	0

The Sum 43 18 2 0

These several sums taken out of the Table for 6 Months, and added together, make 43 *l.* 18 *s.* 2 *d.* and that is the Interest or profit that 1463 *l.* 15 *s.* will yield in 6 Months.

Question V.

If I receive 3 l. 19 s. 6 d. 3 q. for Interest at 3 Months end, what is my Principal money.

Turn to the Table of 3 Months, and amongst the sums there find the nearest, that is less, to your money received, and set it down, noting what principal sum stands against it, and set that by it.

Then find another sum that will with the other come nearer to your received sum, and set that and the Principal belonging to it under the other. And thus continue till you have made up your Sum to a farthing, then will the sum of the Principals added together, be equal to the Principal for which you received your money.

Example.

Look in the Table for 3 Months for the nearest entire sum to 3 *l.* 10 *s.* 6 *d.* 3 *q.* and you shall find

3 *l.*

3 *l.* to stand against 200 *l.* wherefore set down 200 *l.* and 3 *l.* by it, as in the Margine; Then look in the same Table for 19 *s.*

which you cannot find, but 18 *s.* you shall find to stand against 60 *l.* set that down; then look for 1 *s.* 6 *d.* 3 *q.* which you cannot find, but 1 *s.* 6 *d.* you find to stand against 5 *l.* which set down;

Lastly find 3 *q.* which you may see stand against 5 *s.* These several sums being set down as in the Margine, and added together, they make 3 *l.* 19 *s.* 6 *d.* 3 *q.* equal your sum for Interest received, and the sum of the Principals added make 265 *l.* 5 *s.* and that was the Principal for which that Interest was due in 3 Months.

Question VI.

*What is the Interest of 763 *l.* 10 *s.* in 9 Months.*

In the Table you cannot find 700 *l.* wherefore take the Interest of 500 *l.* and 200 *l.* then take the Interest of 60 *l.* then the Interest of 3 *l.* and lastly of 10 *s.* which set together, and added, make 34 *l.* 7 *s.* 1 *d.* 1 *q.* which is the Interest due upon 763 *l.* 10 *s.* for 9 Months, as here you see.

	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
Interest Of 500 <i>l.</i> for 9 Months	22	10	00	00
Of 200 for 9 Months	9	00	00	00
Of 60 for 9 Months	2	14	00	00
Of 3 for 9 Months	0	2	7	3
Of 10 <i>s.</i> for 9 Mon.	0	0	5	2

The Sum 34 07 1 1
G 3 Tables

T A B L E S
Of Simple Interest at 8 *per Cent.* for a Year,
or any number of Months, and from
5 *s.* to 1000 *l.*

Simple Interest, at

Principal	I Months.				II Months.				III Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 <i>s.</i>	0	0	0	2	0	0	0	3	0	0	1	1
10	0	0	0	3	0	0	1	2	0	0	2	2
15	0	0	1	1	0	0	2	2	0	0	3	2
1 <i>l.</i>	0	0	1	2	0	0	3	1	0	0	4	3
2	0	0	3	1	0	0	6	2	0	0	9	2
3	0	0	4	3	0	0	9	2	0	1	2	2
4	0	0	6	2	0	1	0	3	0	1	7	1
5	0	0	8	0	0	1	4	0	0	2	0	0
6	0	0	9	2	0	1	7	1	0	2	4	3
7	0	0	11	1	0	1	10	2	0	2	9	2
8	0	1	0	3	0	2	1	2	0	3	2	2
9	0	1	2	2	0	2	4	3	0	3	7	1
10	0	1	4	0	0	2	8	0	0	4	0	0
10	0	2	8	0	0	5	4	0	0	8	0	0
20	0	4	0	0	0	8	0	0	0	12	0	0
30	0	6	4	0	0	16	8	0	0	16	0	0
40	0	8	8	0	0	13	4	0	1	0	0	0
50	0	10	0	0	0	16	0	0	1	4	0	0
60	0	12	4	0	0	18	8	0	1	8	0	0
70	0	14	8	0	1	1	4	0	1	12	0	0
80	0	16	0	0	1	4	0	0	1	16	0	0
90	0	18	4	0	1	6	8	0	2	0	0	0
100	1	6	8	0	2	13	4	0	4	0	0	0
200	2	00	0	0	4	0	0	0	8	0	0	0
300	2	13	4	0	5	6	8	0	8	0	0	0
400	3	6	8	0	6	13	4	0	10	0	0	0
500	4	10	0	0	7	16	0	0	12	0	0	0
600	4	16	4	0	8	18	8	0	14	0	0	0
700	5	0	0	0	9	2	0	0	16	0	0	0
800	5	6	4	0	10	6	8	0	18	0	0	0
900	6	10	8	0	11	10	0	0	20	0	0	0
1000	6	13	4	0	13	6	8	0	20	0	0	0

TABLES
Of Simple Interest at 8 per Cent. for a year,
or any number of Months, and from
5 s. to 1000 l.

8 per Cent. for

Principal	VI Months.				IX Months.				A Year.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	2	2	0	0	3	2	0	0	4	3
10	0	0	4	3	0	0	4	1	0	0	9	2
15	0	0	7	1	0	0	10	3	0	1	2	3
1 l.	0	0	9	2	0	1	2	2	0	1	7	1
2	0	1	7	1	0	2	4	3	0	3	2	2
3	0	2	4	3	0	3	7	1	0	4	9	2
4	0	3	2	2	0	4	9	2	0	6	4	3
5	0	4	0	0	0	6	0	0	0	8	0	0
6	0	4	9	2	0	7	2	2	0	9	7	1
7	0	5	7	1	0	8	4	3	0	11	2	1
8	0	6	4	3	0	9	7	1	0	12	9	2
9	0	7	2	1	0	10	9	2	0	14	4	3
10	0	8	0	0	0	12	0	0	0	16	0	0
20	0	16	0	0	1	4	0	0	1	12	0	0
30	1	4	0	0	1	16	0	0	2	8	0	0
40	1	12	0	0	2	8	0	0	3	4	0	0
50	2	0	0	0	3	0	0	0	4	0	0	0
60	2	8	0	0	3	12	0	0	4	16	0	0
70	2	16	0	0	4	4	0	0	5	12	0	0
80	3	4	0	0	4	16	0	0	6	8	0	0
90	3	12	0	0	5	8	0	0	7	4	0	0
100	4	0	0	0	6	6	0	0	8	0	0	0
200	8	0	0	0	12	12	0	0	16	0	0	0
300	12	0	0	0	18	8	0	0	24	0	0	0
400	16	0	0	0	24	4	0	0	32	0	0	0
500	20	0	0	0	30	0	0	0	40	0	0	0
1000	40	0	0	0	60	0	0	0	80	0	0	0



Concerning the Table of 8 per Cent.

THis Table needeth no Description or Construction, for in both particulars it is the same, only the Rate of Interest is different, that being for 6, this for 8 per Cent. and the Months in the other went from 1 to a Year without intermission, but this goes from 1 to 3 Months, and then to 6 Months, 9 Months, and a Year; the 6 other being omitted and supplied, as by the Questions following will appear.

Question I.

What is the Interest due upon 400 l. for 2 Months at 8 per Cent.

Look in the Table for the Column belonging to 2 months, and descend down the same till you come against 400 l. in the first Column, where you shall find 5 l. 6 s. 8 d. and such is the Interest of 400 l. for 2 months.

Question II.

What is the Interest of 35 l. for 9 months.

The Interest of 30 l. for 9 months will be found to be 1 l. 16 s. 0 d. and the Interest of 5 l. for the same time, will be 6 s. which added, make 2 l. 2 s. and so much is the Interest of 35 l. in 9 months.

		<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
30 l.	In 9 months	1	16	0	0
5	In 9 months	0	6	0	0
The Sum		2	2	0	0
		<i>Quest.</i>			

Question 111.

What is the Interest of 976 l. for 7 months?

In the Table you can neither find the sum of money, nor the time in one sum, wherefore you must take them out at two or three times, Thus :

The months being 7, you must for them, take 6 months, and 1 month, and for the sum of pounds being 976 l. you must take 400 l. 500 l. 70 l. and 6 l. out of both months, and add them together for the Interest of your sum ; As thus :

		<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
400	} For 6 months, is	16	00	0	
500		20	00	0	
70		2	16	0	0
6		0	4	9	2

400	} For 1 Month, is	2	13	4	0
500		3	6	8	0
70		0	9	4	0
6		0	0	9	2

The Sum 45 10 11 0

Which is the Interest of 976 l. for 7 months. And thus must you do in the like Cases where neither Principal nor time can be found in one sum in the Tables.

Let it suffice that we have inserted these Tables, and their Use concerning the Interest or Increase of money ; I will now give you the like Tables, for Decrease or Rebate of money.

Tables

Tables of Rebate at 6 per Cent. By which the Rebate of any Sum of Money due at any number of Months, &c. or at a Year, may be easily discovered.

Rebate at

The Sum bated for	I Month.				II Months.				III Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
1	0	0	0	1	0	0	0	1	0	0	0	1
2	0	0	0	2	0	0	1	1	0	0	1	3
3	0	0	0	3	0	0	2	3	0	0	2	2
4	0	0	1	1	0	0	3	1	0	0	3	2
5	0	0	2	1	0	0	4	3	0	0	7	0
6	0	0	3	4	0	0	7	0	0	0	10	2
7	0	0	4	3	0	0	9	2	0	1	2	1
8	0	0	6	0	0	0	11	3	0	1	5	3
9	0	0	7	1	0	1	2	1	0	1	9	1
10	0	0	8	1	0	1	4	2	0	2	1	3
11	0	0	9	2	0	1	7	0	0	2	4	1
12	0	0	10	3	0	1	9	1	0	2	7	3
13	0	1	0	0	0	1	11	3	0	2	11	2
14	0	1	11	3	0	3	11	2	0	5	10	3
15	0	2	11	3	0	5	11	1	0	8	10	2
16	0	3	11	3	0	7	11	0	0	11	9	3
17	0	4	11	3	0	9	10	3	0	14	9	1
18	1	5	11	2	0	19	10	2	0	17	8	3
19	1	6	11	2	0	13	10	2	1	0	3	1
20	1	7	11	2	0	15	10	0	1	3	7	3
21	1	8	11	2	0	17	9	3	1	6	7	1
22	0	9	11	2	0	19	9	2	1	9	6	3
23	0	19	10	3	1	19	7	1	2	19	1	1
24	1	9	10	1	2	19	4	3	4	8	8	0
25	1	19	9	2	3	19	2	2	5	18	2	3
26	2	9	9	0	4	19	0	0	7	7	9	2
27	4	19	6	0	9	18	0	1	14	15	6	3

Tables of Rebate at 6 per Cent. By which the Rebate of any Sum of Money due at any number of Months, &c. or at a Year, may be easily discovered.

6 per Cent. for

The Sum Re- bated for	IV Moneth.				V Months.				VI Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5.	0	0	1	1	0	0	1	2	0	0	1	3
10	0	0	2	1	0	0	2	3	0	0	3	2
15	0	0	3	2	0	0	4	1	0	0	5	1
1 l.	0	0	4	3	0	0	5	3	0	0	7	0
2	0	0	9	2	0	6	11	3	0	1	2	0
3	0	1	2	0	0	1	5	2	0	1	9	0
4	0	1	6	3	0	1	11	2	0	2	4	0
5	0	1	11	2	0	2	5	1	0	2	11	0
6	0	2	4	1	0	2	11	0	0	3	6	0
7	0	2	8	3	0	3	4	3	0	4	1	0
8	0	3	1	2	0	3	10	3	0	4	8	0
9	0	3	6	1	0	4	4	2	0	5	3	0
10	0	3	11	0	0	4	9	2	0	5	10	0
20	0	7	10	0	0	9	9	0	0	11	7	3
30	0	11	9	1	0	14	7	2	0	17	5	3
40	0	15	8	1	0	19	6	0	1	3	3	2
50	0	19	7	1	1	4	4	2	1	9	1	2
60	1	3	6	1	1	9	3	1	1	14	11	2
70	1	7	5	2	1	14	11	3	2	0	9	1
80	1	11	4	2	1	19	0	1	2	6	7	1
90	1	15	3	2	2	3	10	3	2	12	5	0
100	1	19	2	2	2	8	9	1	2	18	3	0
200	2	18	5	1	4	17	6	3	5	16	6	0
300	5	17	7	3	7	6	4	0	8	14	9	0
400	7	16	10	2	9	15	1	2	11	13	0	0
500	9	16	0	3	12	3	10	3	14	11	3	0
1000	19	12	1	3	24	7	9	2	29	2	6	1

Tables of Rebate at 6 per Cent. By which the Rebate of any Sum of Money due at any number of Months, &c. or at a Year, may be easily discovered.

Rebate at

The Sum Re- bated for	VII Months.				VIII Months.				IX Months.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	2	0	0	0	2	1	0	0	2	2
10	0	0	4	0	0	0	4	2	0	0	5	1
15	0	0	6	0	0	0	6	3	0	0	7	1
1 l.	0	0	8	0	0	0	8	1	0	0	10	1
2	0	1	4	1	0	1	6	2	0	1	8	3
3	0	2	0	1	0	2	3	3	0	2	7	0
4	0	2	8	2	0	3	0	3	0	3	5	1
5	0	3	4	3	0	3	10	1	0	4	3	2
6	0	4	0	3	0	4	7	2	0	5	2	0
7	0	4	8	3	0	5	4	2	0	6	0	1
8	0	5	5	0	0	6	1	3	0	6	10	3
9	0	6	1	0	0	6	11	0	0	7	9	0
10	0	6	9	0	0	7	8	1	0	8	7	1
20	0	13	6	1	0	13	4	2	0	17	2	3
30	1	0	3	2	1	3	1	0	1	5	10	0
40	1	7	0	3	1	10	9	1	1	14	5	2
50	1	13	9	3	1	18	5	2	2	3	0	3
60	2	0	6	3	2	6	1	3	2	11	8	0
70	2	7	4	0	2	13	10	1	3	0	3	2
80	2	14	1	1	3	1	6	2	3	8	10	3
90	3	0	10	2	3	0	2	3	3	17	6	0
100	3	7	7	2	3	16	11	1	4	6	1	2
200	6	15	3	1	7	13	10	0	8	12	3	0
300	10	2	10	3	11	10	9	1	12	18	4	1
400	13	10	6	1	15	7	8	1	17	4	5	0
500	16	18	2	2	19	4	7	1	21	10	7	1
1000	33	16	4	0	38	9	2	3	43	1	3	0

Tables of Rebate at 6 per Cent. By which the Rebate of any Sum of Money due at any number of Months, &c. or at a Year, may be easily discovered.

6 per Cent. for

The Sum Re- bated for	X Months.				XI Months.				A Year.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	2	3	0	0	3	0	0	0	3	2
10	0	0	5	2	0	0	6	1	0	0	6	3
15	0	0	8	2	0	0	9	1	0	0	10	1
1 l.	0	0	11	2	0	1	0	2	0	1	1	2
2	0	1	10	3	0	2	1	0	0	2	3	0
3	0	2	10	1	0	3	1	2	0	3	4	3
4	0	3	9	3	0	4	2	0	0	4	6	1
5	0	4	9	0	0	5	2	2	0	5	7	3
6	0	5	8	2	0	6	3	0	0	6	9	2
7	0	6	8	0	0	7	3	2	0	7	11	0
8	0	7	7	2	0	8	4	0	0	9	0	3
9	0	8	6	3	0	9	4	2	0	10	2	1
10	0	9	6	1	0	10	5	0	0	11	3	3
20	0	19	0	2	1	0	10	1	1	2	7	3
30	1	8	6	3	1	11	3	2	1	13	11	2
40	1	18	1	0	2	1	8	2	2	5	3	2
50	2	7	7	2	2	12	1	2	2	16	7	1
60	2	17	1	3	3	2	6	3	3	7	11	0
70	3	6	8	0	3	12	11	3	3	19	2	3
80	3	16	2	1	4	3	5	0	4	10	6	2
90	4	5	8	2	4	13	10	0	5	1	10	2
100	4	15	2	3	5	4	3	1	5	13	2	2
200	9	10	5	3	10	8	6	1	11	6	5	0
300	14	5	8	3	15	12	9	2	16	19	7	2
400	19	0	11	2	20	17	0	3	21	12	10	0
500	23	16	2	1	26	1	4	0	28	6	0	2
1000	47	12	4	2	52	2	7	3	56	12	1	0



A Description of these Tables of Rebate.

THese Tables, (as those of Interest did) do contain four Pages, and each Page four Columns, the first of which contains any sum of money to be Rebated for from 5 s. to 1000 l. as the other Tables did for any Principal money, and in the same order, by 5, 10, and 15 s. then from 1 l. to 10 l. and from 10 l. to 100 l. and from 100 l. to 500 l. and lastly to 1000 l. And the months begin at One, and go on by 2, 3, 4, &c. to a Year, for the time that any sum of money is to be Rebated for. And herein consists the difference of Interest and Rebate, that as money forborn beyond the time it is due, does increase; So money Rebated for, or taken before its time, does in its Principal decrease, but not in the same proportion.

The Construction or Making of these Tables.

For the Construction or Making of this Table, this is the Analogie or Proportion.

As 100 l. with the Interest thereof for any time,
Is to 100 l.

So is any other sum to be paid at that same time,
To the worth of that sum in ready money.

Example.

Suppose 300 l. were to be paid 9 months hence,
what is it worth to be paid presently.

Say,

Say, As 100 *l.* with the Interest thereof for 9 months, which is 4 *l.* 10 *s.* is to 100 *l.* so is 300 *l.* to what? Set your numbers as here you see, and work by the rule of Proportion; so shall you find the 300 *l.* due 9 months hence to be worth 287 *l.* 1 *s.* 7 *d.* 2 *q.* which is 12 *l.* 18 *s.* 4 *d.* 2 *q.* less than the full sum; and this number you see stands in the Table under IX Months, against 300 *l.*

See the Work.

As 104 *l.* 10 *s.* to 100 *l.* So 300 *l.* to 287 $\frac{17}{100}$

20

 2090

20

 6000

1
 124(1
 2828(7
 600000 287 *l.* $\frac{17}{100}$ which reduc-
 209990 ced is 1 *s.* 7 *d.* 2 *q.*
 200
 2

The Use of these Tables.

Question I.

If 400 l. to be paid 8 months hence, be paid presently, what is to be rebated?

Look in the Table of 8 months, and cast your eye down that Column, till you come against 400 *l.* in the first Column, and in that line you shall find 15 *l.* 7 *s.* 8 *d.* 1 *q.* and so much must be rebated to receive the money presently.

And here note that this is not equal to the Interest that 400 *l.* would have amounted to in 8 months, which is 16 *l.* but is less by 4 *s.* 3 *d.* 3 *q.*

Quest.

Question I I.

If 1829 l. 15 s. be to be paid at the end of twelve months, or a Year, what is the Rebate, and what ready money will satisfy the debt?

You must take it at several times out of the Table, as you did in finding the Interest, Thus:

	<i>l.</i>	<i>s.</i>		<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
	1000	0		56	12	1	0
	400	0		22	12	10	0
The Re- bate of	400	0	for a	22	12	10	0
	20	0	Year	1	2	7	3
	9	0	is	0	10	2	2
	15	0		0	0	10	1

The Sum of the Rebate is 103 11 5 2
Which Subtracted from the sum to be received,
leaves 1726 l. 3 s. 6 d. 2 q. and so much ready money must be paid in full satisfaction presently.

	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
The whole debt	1829	15	0	0
The Rebate for 12 months	103	11	5	2

The sum satisfactory 1726 3 6 2

Question I II.

If 300 l. be to be paid in 9 months, at three several payments, namely at three three months, that is 100 l. at 3 months, 100 l. at 6 months, and 100 l. more at 9 months. If the Debtor would discharge it presently, what sum of money must he pay.

	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
The Rebate of 100 l for 3 months, is	1	9	6	3
100 for 6 months, is	2	18	3	0
100 for 9 months, is	4	6	1	2
The Sum	8	13	11	1
Which				

Which substracted from 300 l. (the full sum) there remains 291 l. 6 s. 0 d. 3 q. which present money will discharge the debt so to be paid.

Question IV.

If a Legasie be to be paid of 100 l. by monthly payments, 10 l. a month, what money must the Executor deposite presently to the Legasie, he rebating after the rate of 6 per Cent.

You must conceive that this Legasie would have been all paid in 10 months; wherefore take out of every month successively from 1 to 10 months (including both) the rebates, and add them together, their sum taken from 100 l. leaves the money that the Executor is to pay presently.

			l.	s.	d.	q.		
The Rebate of 10 l. for	{	1	Months is	{	0	1	0	0
		2			0	1	11	3
		3			0	2	11	2
		4			0	3	11	0
		5			0	4	9	2
		6			0	5	10	0
		7			0	6	9	0
		8			0	7	8	1
		9			0	8	7	1
		10			0	9	6	1

The Sum	2	13	7	2
Which substracted from	100	0	0	0

There remains	97	6	4	2
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And so much ready money will satisfie the Legasie of 100 l. to be paid as aforesaid,

T A B L E S OF R E B A T E

At 8 per Cent.

Rebate at

<i>The Sum Re- bated for</i>	<i>I Month.</i>				<i>II Months.</i>				<i>III Months.</i>			
	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
5 s.	0	0	0	1	0	0	0	3	0	0	1	0
10	0	0	0	2	0	0	1	2	0	0	2	1
15	0	0	1	0	0	0	2	1	0	0	3	1
1 l.	0	0	1	1	0	0	3	1	0	0	4	0
2	0	0	2	2	0	0	6	2	0	0	8	0
3	0	0	3	3	0	0	9	3	0	1	0	0
4	0	0	5	0	0	1	1	0	0	1	4	0
5	0	0	6	1	0	1	4	1	0	1	8	0
6	0	0	7	2	0	1	7	2	0	2	0	0
7	0	0	8	3	0	1	10	3	0	2	4	0
8	0	0	10	0	0	2	2	0	0	2	8	0
9	0	0	11	1	0	2	5	1	0	3	0	0
10	0	1	4	0	0	2	7	2	0	3	10	3
20	0	2	8	0	0	5	3	0	0	7	9	2
30	0	4	0	0	0	7	10	2	0	11	8	1
40	0	5	4	0	0	10	6	0	0	15	7	0
50	0	6	8	0	0	13	1	2	0	19	5	3
60	0	8	0	0	0	15	9	0	1	3	4	2
70	0	9	4	0	0	18	4	2	1	7	3	1
80	0	10	8	0	1	1	0	0	1	11	2	0
90	0	12	0	0	1	3	7	1	1	15	0	3
100	0	13	2	3	1	6	3	3	1	19	2	2
200	1	6	5	2	2	12	7	2	3	18	5	0
300	1	19	8	1	3	18	11	1	5	17	7	2
400	2	12	11	0	5	5	3	0	7	16	10	0
500	3	6	1	3	6	11	6	3	9	16	0	2
1000	6	14	3	2	13	3	1	2	19	12	1	0

TABLES OF REBATE

At 8 per Cent.

8 per Cent. for

The Sum Re- bated for	VI Months.				IX Months.				A Year.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
5 s.	0	0	2	1	0	0	3	2	0	0	4	2
10	0	0	4	2	0	0	7	1	0	0	9	2
15	0	0	7	0	0	0	10	2	0	1	2	1
1 l.	0	0	9	1	0	1	1	2	0	1	5	1
2	0	1	6	2	0	2	3	0	0	2	10	2
3	0	2	3	3	0	3	4	2	0	4	3	3
4	0	3	1	0	0	4	6	0	0	5	9	0
5	0	3	10	1	0	5	7	2	0	7	2	1
6	0	4	7	2	0	6	9	0	0	8	7	2
7	0	5	4	3	0	7	10	1	0	10	0	3
8	0	6	2	0	0	9	0	0	0	11	6	0
9	0	6	11	1	0	10	1	2	0	12	11	1
10	0	7	8	2	0	11	3	3	0	14	10	3
20	0	15	5	0	1	2	7	2	1	9	9	2
30	1	3	1	2	1	13	11	1	2	4	8	1
40	1	10	30	0	2	5	3	0	3	19	7	0
50	1	18	6	2	2	16	6	3	3	14	5	3
60	2	6	3	0	3	7	10	2	4	9	4	2
70	2	13	11	2	3	19	2	1	5	4	3	1
80	3	1	8	0	4	10	6	0	5	19	2	0
90	3	9	4	2	5	1	9	3	6	14	0	3
100	3	16	11	1	5	16	1	0	7	8	1	3
200	7	13	10	2	11	11	2	0	14	16	3	2
300	11	10	1	3	17	8	3	0	22	4	5	1
400	15	7	1	0	23	4	4	0	29	12	7	0
500	19	4	0	1	29	0	5	0	37	0	8	3
1000	38	8	0	2	58	0	10	0	74	1	5	2

Concerning these Tables of Rebate.

THese Tables for Rebate at 8 *l. per Cent.* have the same Construction, and are to be used in all respects as those other of 6 *l. per Cent.* were; and therefore it were needless here to say any thing more concerning them in this place, it being sufficient that the Tables themselves be here. Only take notice, that the Tables for 6 *l. per Cent.* went from One Month to a Year successively; and these are only for I. II. III. VI. IX. Months, and a Year. And so I conclude this Treatise.

The End of the First Book.



THE BUILDERS GUIDE.

THE SECOND BOOK.

Comprehending such Generall Rules, and necessary Observations, as anywise appertain to the Erection of Houses, or other Edifices, Great or Small.

AND

Declaring the Names, Natures, Qualities and Quantities of the severall Materials belonging to Building, with the usuall Rates of them; And also of the Works of all Artificers therein Employed.

Whereby Estimates, Valuations and Contracts, may be made without any great Damage either to Builder or Workman.

By William Leybourn.

London, Printed in the Year, 1668.

INT





THE
BUILDERS
GUIDE.

THE ARGUMENT.

W Hereas by means of a most dreadfull
and lamentable Fire hapning in Lon-
don on the Second day of September, in the
year of our Lord 1666. by reason of which, the
most part of that Renowned and Honourable
City, was within the compass of a few dayes
burnt down and destroyed, and now lies buried
in its own Ruines. For the speedy Restauration
whereof, and for the Re-edifying of the same,
the Kings Majesty, together with the assent and
consent of the Lords and Commons in Parlia-
ment Assembled, have (by Act of Parliament,
bearing date Anno 19 Caroli Regis) pre-
scribed Rules and Orders for the Rebuilding
H 4 thereof

thereof both in manner and form, and for that end, have published to the World these their intentions and desires, with strict penalties upon the neglect or breach of what they have there Prescribed and Enacted.

In order whereunto, and to give some light and insight into the Art of Building, unto such as are ignorant thereof, I have collected, and from the experience I have gained by conversing with Workmen, delivered such generall Rules thereunto appertaining, that any person concerned may reap some benefit thereby, and be able (in some measure) to give a reasonable estimate of his Charge in the Erecting of such or such a Fabrick. And I shall begin first with the Materials, their Quality, and Dimensions.

Catechizeta. }
 Precator. } Interlocutors.

P. **W**Hat are those which you call the Materials belonging to Building?

C. Brick, Tile, Timber, Iron, Lead, Laths, Nails, Lime, Sand, &c.

P. Of what are Bricks made?

C. Bricks are made of a reddish Earth, which ought to be digged up in the Winter, but not made

made into Brick till the Spring season, in which the goodness of the Bricks in Building is a main thing to be looked into, both for their quality and quantity.

P. How shall I chuse good Bricks?

C. In every Clampe or Brick-keele (besides the goodness or badness of the Earth, and the well or ill ordering of the Clay) there are three degrees of Brick in goodness.

P. Which be they?

C. The first and best sort are those, which in burning, lie next the fire in the Keele, which if they have much of Salt-peter in them, they will run, and be as it were glazed all over; and these for lasting, exceed all the rest in that Keele, although the Earth and making be the same.

The second and most generall sort for building, are those which lie next in the Keele, to those before mentioned.

The third and worst sort, are those that lie on the outside of the Keele, where the fire hath not so much power as it hath over those nearer; and of these (outside Bricks) those that lie on the wind-side of the Clampe or Keele in the time of Burning, are the worst of all, for they will molder and turn to dust.

P. Of what bigness ought every Brick to be; is there only one, or are there different sizes?

C. There are severall sizes, but the Statute allows but one; neither doth the Law take cognisance of any other.

P. And what are the Scantlings of a Brick by the Statute?

C. The Molds in which Bricks are made,
ought

ought to be in length in the inside 9 inches, in breadth 4 inches and an half; and in depth or thickness 2 inches and a quarter, of which size the Brick ought to be; but you shall seldome find them to hold out so, for the drying and burning will abate something in the thickness, but little in the breadth; and in the length inconsiderable.

P. How are Bricks Rated and Sold?

C. By the Thousand; but for their price it is uncertain, in respect of Work-mens wages, the convenience of Carriage, and the price of Fuel to burn them with. In *London* I have known them at several Rates, as from 9 *s.* to 18 *s.* the Thousand. But for the making, the Molder (besides his Attendants) hath between 4 *d.* and 6 *d.* a 1000. and about 9000, is accounted a reasonable dayes work.

P. What quantity of Bricks can one Bricklayer lay in a day?

C. A Bricklayer with a diligent labourer, in sound and new work, (all materialls being ready) may lay 1000 Bricks and upwards in a day; and 4500 Bricks will make one Rod of Wall, or of the side of a Building, at one Brick and half thick, the Rod, Pole, or Perch, containing 16 foot and a half of Superficiall measure, of which I shall have occasion farther to speak anon.

P. In what are the Bricks laid?

C. In Mortar.

P. What is Mortar made of.

C. Lime and Sand.

P. What quantity of Lime and Sand will make Mortar sufficient to lay 4500 of Bricks, which you say will make a Rod of Wall?

C. To

C. To every 4500 of Bricks, one hundred and a quarter of Lime, and two Load and a half of Sand.

P. *What rates do they usually give for Lime and Sand?*

C. The price of both are various, and the Measure of Lime in many places different, a Quarter of Lime (in some place,) being eight heaped Bushels; but about *London*, Lime is usually 10 s. the Hundred (but not alwayes,) and Sand about 3 s. the Load.

P. *By what you have said, I shall be able, I hope, to make choice of good Bricks, and see that they be of a true gage; and by knowing what quantity of Bricks will serve for any piece of Work, I shall be able to make provision of Lime and Sand answerable thereunto. But concerning Tiles, How are they made, and of what size ought they to be?*

C. Tiles are made of Earth much better than Bricks, inclining to the which Potters use for their Ware. And of Tiles there are divers kinds, but for Building principally two sorts, those are *Plain Tiles*, and *Ridge Tiles*. The length of a Plain Tile is usuall 10 inches and a half, its breadth 6 inches, and its thickness near three quarters of an inch.

P. *How are Tiles rated and sold?*

C. As Bricks are by the Thousand, about 22 or 23 hundred weight grosse, they account a Load, one Tile weighing about 2 pound and an half, so that about 1000 Tiles will make a Load.

P. *How are Tiles hanged on the Roof of a house?*

C. Upon

C. Upon Laths, with Tyle-pins, and laid in Mortar.

P. *How do they measure or rate their Tyling?*

C. By the Square, which is ten foot every way.

P. *What quantity of Mortar will be required to every Square of Tyling?*

C. About a quarter-part of what is allowed for a Rod of Brickwork; but it ought to be dryer, and better wrought.

P. *Of what Wood, and of what Scantlings ought Laths to be?*

C. There are principally two sorts of Laths allowed by Statute, the one of 5 foot long, the other of 4 foot: those of 5 foot, have five score or 100 in the bundle; the other of 4 foot, have six score or 120 in the bundle: But either sort ought to contain in breadth, one inch and an half, and in thickness half an inch. And of either of these lengths, there are three sorts; First, Heart of Oak; Secondly, Sap Laths; and Thirdly, Deal Laths.

P. *At what rates do they sell these Laths?*

C. The price must needs be various, for that there is so great a disparity in the Commodity; but the prizes are generally between a Shilling and half a Crown the Bundle; but the generall rate for Heart Laths, is about 20 d. the Bundle.

P. *What is the reason of these different lengths, and goodness of Stuffs of which they are made?*

C. The reason of these different lengths is, because all Rasters upon which the Laths are nailed, are not spaced at a like distance. And for the goodness of the stuffe, those of Heart of Oak,

Oak, being the best, are most necessary for Tyling: the second sort of Sap Laths, are for plaistered Walls, and those of Deal for Seelings.

P. At what distance are Laths laid upon the Roof of a house one from another.

C. The distance is various, differing more in some places, than in other parts; but 3 inches and an half, and 4 inches, are usuall distances, with a Counter-Lath between Rafter and Rafter, or two, if the Rafters stand at a very large distance.

P. What quantity of Nails will be expended in laying of a Bundle of Laths?

C. To the Laths of 5 foot long 500 Nails, and to the other of 4 foot long 600 Nails, six score to the hundred.

P. How many Laths and Tyles will cover a yard, or three foot, every way?

C. Threescore Tyles laid at a 7 inch gange, will cover a yard; but Tyling, as I said before, is measured by the Square, that is, 10 foot every where, in all 100 foot, which will require 665 Tyles, or thereabouts, and one Bundle of Laths; and one Tyler in a day, will cover such a Square.

P. But if the Tyles be broken much, then there must needs be losse.

C. 'Tis true, there is losse and trouble to the Workman; but these broken Tyles, and half Tyles, will prove usefull at the Eaves, at Straits, in Valleys, at Gable ends, &c. And here note, That the Barge Courses in any Building must be struck with Lime and hair Mortar, and also rendered,

rendered, to prevent the Winds from ripping off the Tyling.

P. *You mentioned another sort of Tyle even now, which you called Ridge Tyles, to what use serve they?*

C. They serve to cover the Ridge or top of the Building, and for every 1000 of plain Tyles, you have ten Ridge Tyles. To these I might have added a third sort, which is, a *Tryangular Tyle*, broad at the bottom, and growing narrow towards the top, and are commonly called *Corner Tyles*. And their rate is between 10 s. and 15 s. the hundred.

P. *I am very well satisfied concerning Bricks and Tyles, and the appurtenances belonging to the use of them in Building, as Lime, Sand, Laths, Nails, &c. Now Sir, would you please to give me the like insight into Timber.*

C. Some generals I will give you; but know, that Timber is of divers kinds, and dearer or cheaper, according as the place where it is so used, is nearer or farther off, and the plenty or scarcity of the Commodity, which can have no Statute Law set upon the growth of it; yet the Law hath made such provision (I wish it were better put in Execution) for the planting in this Kingdome; wherefore only take notice in this place, that 50 foot of Rough Timber is counted a Load, and for Squared Timber, fit for Building, these following are proportioned Both for depth and thickness, or rather the sides of the Square at the end of the piece, Thus;

Summers

	foot	foot		inch.	inch.
Summers or Girders from—	14	16	In Length must be in their Square.	11	8
	16	20		13	9
	20 to	23		14 &	10
	23	26		16	12
	26	28		17	14

	feet		in.	in.
Joysls of	11 $\frac{1}{2}$	In Length must be in their Square.—	8	3
	10 $\frac{1}{2}$		7 &	3
			6	3

	foot	foot		in.	in.
Binding & Trimming Joysls, from	7 to	11 $\frac{1}{2}$	In Length must be in their Square.	6	5
				7 &	5
				8	5

		in.	in.
Wall Plates and Beams, of any Length from 15 foot, may have in their Squares—	7	3	
	10 &	6	
	8	6	

	foot	foot		in.	in.
Purlynes from—	15 $\frac{1}{2}$	18 $\frac{1}{2}$	In Length must have in their Square—	9	8
	to			&	
	18 $\frac{1}{2}$	21 $\frac{1}{2}$		12	9

	foot	foot		in.	in.	in.
Principal Rafters cut Ta- per from	12 $\frac{1}{2}$	14 $\frac{1}{2}$	In Length must have in their Square on one side	8	5	6
	14 $\frac{1}{2}$	18 $\frac{1}{2}$		9	7	7
	18 $\frac{1}{2}$ to	21 $\frac{1}{2}$		10 to	8	8
	21 $\frac{1}{2}$	24 $\frac{1}{2}$		12	9	8
	24 $\frac{1}{2}$	26 $\frac{1}{2}$		19	9	9

Single

	feet		in.	in.
Single Rafter	$6\frac{1}{2}$	Must have	4	$3\frac{1}{2}$
in Length from	0	in their	&	
$6\frac{1}{2}$ to $9\frac{1}{2}$ —	$9\frac{1}{2}$	Square	5	4
	foot		in.	in.
Principal dis-	10	Must have	13	12
charges of any		in their		
Length from	upward	Square	15	13

And these are the principall Timbers belonging to the direction of any ordinary Edifice, either great or small; but Carpenters usually Work by the Square of 10 foot: Of which more in due place.

P. *You have well satisfied me in all the forementioned Materials, and I think you mentioned Lead amongst the rest.*

C. I did so, and it is a Materiall one, and chiefly used for the covering of Churches, Halls, and other publique places; but in common Buildings, it is chiefly used for Gutters, and Pipes, to convey the water, and carry it cleer off the house into some convenient place; for which use, the thinnest is most used, as being most plyable. One foot of this Lead (if new) weigheth 8 or 9 pound; but if old, lesse, as 6 or 7, and the longer it hath layen, the more it will run to wast in the melting.

P. *What allowance is given for such wast.*

C. There is commonly allowed about 3 s. in every hundred weight for wast and workmanship; and in covering a house with Lead (which is lighter than Tyles) although 100 weight will
cover

cover a yard square, yet it will be much dearer than Tyling; for that Soder is at 9 d. 10 d. nay sometimes at 12 d. per pound, as it is allay'd with Lead.

P. *Methinks that Iron is a very considerable material in the erecting of a house; for besides Nails, there are divers other things appertaining to a house.*

C. There are so; As Dogs of Iron, Bolts, Staples, Hinges, Hooks, Window bars, &c. all which are commonly made at 3 d. half peny, or 4 d. a pound.

P. *But will they make all other Iron work belonging to a house, at that rate?*

C. No; for Casements are not valued by the weight, but according as they are large, strong, and good, the workmanship in their Locks and Hinges, so are these commodities valued, as from 3 s. to 20 s. a Casement. As Casements about 2 foot and an half in length, about 4 s. or 4 s. 6 d. a piece. Folding Casements of the like bigness, with Bolts, Hinges, &c. about 12 s. or 13 s. a pair. Plain Casements of 4 foot, or thereabout, at 5 s. or 5 s. 6 d. the pair; and large folding Casements according to that bigness, and sometimes larger, at 16, 18, or 20 s. the pair.

P. *A very considerable difference.*

C. The like for Locks and Keys; they are all to be rated according to their largeness and goodness of work.

P. *Concerning Glass, I would be satisfied in that also, both in the quality and quantity.*

C. The Glass which we use here in England;

is that which is made at *New-Castle* and *Woolledge*; the size of those Tables into which they make them, do contain about 5 foot; 45 of these Tables do go to a Case, the price uncertain, for when Coals are plenty, Glass is cheap, and when there is a scarcity of Coals in *London*, then Glass is dear, not that they want Coals at *New-Castle*, but, because they have no other conveyance for their Glass from *New-Castle* hither, but by the Coal-ships; so that sometimes it is at 25 s. and sometimes at 40 s. the Case.

P. *If the Glass be worth so much whole, it must needs be dearer when it is cut into Squares or Quarries.*

C. To cut a Case into Quarries Diamond-fashion (with halves, quarters, and three quarters of Quarries, as the Glass falls out) it is worth about 6 or 7 s. and this form improves the Glass best, for that there is little loss. Of these Quarries there are severall forms, some bigger, some lesser; but the most generall size is six inches from angle to angle one way, and 4 inches the other.

P. *How many of these Pains of Glass do go to a foot?*

C. Every Quarry of this size contains 12 inches, and consequently there should be 12 Quarries in a foot, but between 10 and 11 (counting halves and quarters) do usually make a foot, the Lead supplying the remainder. And a foot of this Glass being banded and set up, 5 d. or 6 d. a foot is a usuall rate; but in measuring, Casements must be measured to the length and breadth of the Iron and Oval Windows (if any) they

they must be measured as if they were square Windows of such a length and breadth, for that there is more trouble in them, than in plain Work. There is another sort of Glass used here in *England*, which is called *Normandy Glass*; of this Glass, 25 Tables make a Case; it is thinner, clearer, and more transparent than the other, and is much dearer, and is commonly cut into long squares.

P. I had almost forgot the Plasterer; how do they work, by what measure, and at what rates?

C. They do work by the yard square, and their prizes are various according to their several works: As plastering upon the bare walls is usually 3 *d.* or 4 *d.* the yard square, upon bare Laths, from 9 *d.* to 1 *s.* 2 *d.* and the like for plain Seilings. Rendering the inside of walls, they value at about 3 *d.* the yard. Roughcast upon Heart-Lath, workmanship, and all materials found, is reckoned from 1 *s.* to 3 *s.* the yard. Plastering upon Brick-work, in imitation of Stone, with finishing Mortar, from 12 *d.* to 1 *s.* 6 *d.* the yard; and that work upon Heart-Lath, at 2 *s.* and 3 *s.* the yard; in all which works, the Scaffolding is to be considered.

P. I have troubled you sufficiently at this time; but yet the painter is wanting.

C. For Doors, Windows, Architroves, Frieses, Cornices, and all other Timbers belonging to a house exposed to the weather, they are usually laid in Oyl, after the rate of 3 *d.* or 3 *d.* halfpeny the yard square, so often as they shall lay them, three times is sufficient, of which the first time spends as much oyl as both the

other, besides stoping. For Lights or Window-cases, they are usually not measured, but valued by the light, as at 3 *d.* 4 *d.* or 6 *d.* the light, according as they are in greatnesse. In the measuring of their work, they run a string over all where the Brush goes; but sometimes in Rails, and Banisters, they will measure it as if it were flat measure. I have seen the experiment tryed, and the difference would not countervalue the trouble of Girting.

P. For Paving, how do men deal for that?

C. The Pavings within doors, are principally of two kinds, the one with square Tyles, the other with Free-stone; and these kinds of Pavings, are chiefly for publique places in and about a house, as Court-yards, Halls, Kitchens, Wash-houses, and the like. The paving with square Tyles, is valued by the square, and the dearer the smaller the Tyles are; for these kind of Tyles are of severall sizes, some of 6, some of 8, others of 10, and some of 12 inches square; their price is from 6*s.* to 20*s.* the hundred; they are laid in Mortar as Bricks, and other plain Tyles are.

For paving with free-stone, as it is taken out of the Quarrie, the usuall rate is 7 *d.* or 8 *d.* a foot square for Stone and Workmanship; but if the Stones be squared to a size, and ruled smooth, it is then dearer, as 12 *d.* or 14 *d.* a foot.

Paving with Marble, of which there are commonly for pavement used three sorts, *viz.* White, Black, and Grey; they are most commonly used for the paving of Chimney-hearths, and laid Lazange wayes, one of white, another
of

of black, laid angle to angle; and this kind of Paving, for Stone and Workmanship, they value at 2 s. 6 d. or 3 s. the foot, the dearer as the Stones are cleaner and well polished.

P. *In the Ornaments, in the inside of a house, a Joiners and Carvers works are considerable.*

C. The works of either of these in ordinary buildings at their first erection, is not very materiall, Rails and Ballisters, for Stair-Cases, Heads, Pendants, Balls, Bandilirers Carved, &c. which particulars are sold or wrought by the dozen, or particularly, according to their dimensions. As Ballisters are rated at one penny the inch upon the Diameter, so that if they be 3 inches upon the Diameter (or over) 3 s. the dozen is usuall, 4 inches 4 s. and 6 inches, 6 s. the dozen. The like for Heads and Pendants, if 5 inches over, 5 d. a piece; if 6, then 6 d. &c. For large Balls of about 12 inches Diameter, 2 s. 6 d. or 3 s. a piece. And for Carving of Bandilirers with flowers, and other works, of about 7 or 8 inches, 5 s. or 5 s. 6 d. more or less, according to the curiosity or slightness of the work.

And thus have I given you a generall account of the nature, quality, and goodness of every or most of the materials appertaining to building, with a moderate estimate of their prizes, and what wages is usually given for the workmanship in disposing of them. It resteth now, that I say something more particularly of the Bricklayers and Carpenters work, and how they are usually valued.

P. But their two Works and Materials, rests the
 strasse and charge of a building.

C. It doth so; and know therefore, that Brick-
 layers do work generally by the Rod, of 16 foot
 and a half square, for whole buildings, and walls;
 in which works, 4500, or 5000 Bricks, will
 compleatly lay a Rod, Pole or Perch, measured
 upon the surface of the building, or along a
 Wall.

P. I partly understand you, but in buildings of
 houses (and so likewise in Walls) the wall at the
 foundation is thickest, at the next Story somewhat
 less, and the higher you go, the thinner it is.

C. It is very true; wherefore, in the mea-
 suring of the Bricklayers work, you must note
 to what height, how far of the building the wall
 is 3 bricks thick, how far 2 and a half thick,
 how high two brick thick, how much one brick
 and half thick, and how much one single brick
 thick, and so reduce the severall thicknesses of
 the walls all to that of one brick and half in
 thickness, and it is of such a thickness, that I say,
 4500 or 5000 bricks, will lay a compleat Rod
 or Pole of 16 foot and a half square, measured
 upon the superficies or outside of the wall or
 building.

P. So then if a wall be 3 bricks thick, half a
 Pole, that is, 8 foot and a quarter shall make a Rod
 square.

C. It will so, provided the wall be 16 foot
 and an half high, otherwise not; for if a wall be
 a brick and half thick, and 8 foot and a quarter
 (which is half a Rod) high, then there must go
 two Rod in length (which is 33 foot) to make a
 Rod square.

P. Then

P. *Then I understand you; what it wants in height, it must have in length, and if it exceed a Rod in height, it must be lesse than a Rod in length to make a Rod square.*

C. You are in the right; and this course is to be observed in walls chiefly, or in houses if you girt them, or in a front of many houses together; but for a single house or two, a lesser measure than the Rod is best, as the foot or yard, which may be afterwards reduced to the greater measure of the Rod. And here again observe, that if a wall exceed a brick and half, there must be a proportionable allowance; as a wall 3 bricks in length is double work, double stuffe, and consequently double charges every way. A wall 2 bricks and half thick, it is in proportion to a wall of a brick and half, as 3 is to 5, wherefore, for every three foot thereof, five foot must be allowed, so likewise in the square of 10 foot, or in the Rod of 16 foot and an half; so a wall of two bricks thick, exceeds one of a brick and a half by one quarter, and must be so allowed. On the contrary, when a wall is less then a brick and half, of a single brick (called a 9 inch wall) one third part is to be added to equallize a brick and half.

P. *I apprehend what you say very well; but for Windows, Doors, &c. which fall amongst the Brick-work, what must be done with them?*

C. You must measure the whole Fabrick, as if there were no such things, and when you have done, measure all those particulars severally, and add them together, and subtract their sum from the general measure; so shall the true mea-

ture of the brick-work remain. And farther note, that in measuring any house, if you take the breadth thereof on the outside of the wall, you must take the length thereof within, or the length without and the breadth within, which is all one. Also all Peeres, Butteresses, &c. are measured by themselves, and the Copings of walls must go to the heighth, for the labour in laying, countervalues the bricks saved.

P. I understand now how they measure, but at what rates do Bricklayers do this work?

C. Variously; according to the dearness or cheapness of the materials, which often rise and fall; but usual rates are 5 *l.* and 5 *l.* 10 *s.* the Rod square of new work; and if bricks be laid in at the builders charge, then 50 *s.* is a usual price; but if the workman be to reare new walls, by making good of old ones, then he may deserve 3 *l.* or 3 *l.* 10 *s.* the Rod square.

P. But is all new work alike, that you make no distinction?

C. No, for walls which are low, small store of Scaffolling will serve the turn; and in houses 3 or 4 Stories high, there is much more Scaffolling; besides, the bricks on the front of any house which lies near the Street or High Road, are rubbed and made smooth, and at every Story an Architrive, and over the Windows and Doors, the bricks are laid Arching, which is not only ornamental, but (if they be well laid) a strengthening to the building also; and if there be much of this front work, he may deserve 6 *l.* a Rod, which if you agree with the Brick-layer by the great, he may well afford to do, though bricks be at 16 *s.* the thousand.

P. You

P. You have given me good satisfaction in all the particulars I desired concerning the Bricklayer; but for the Tyling, how do they rate that, and measure that?

C. They measure their Tyling by the square of 10 foot, and in measuring, when they come to Valleys, they are allowed them according to the length at the top Ridge; but that is sometimes too much, and sometimes too little, the trouble being sometimes far more than the Tyles, Laths, and Nails are worth, but discretion in that case must be moderator; the like in Dormer-windows and corners. A square of plain Tyling at 7 inches Gage, will be covered with between 660 and 670 Tyles. And they do value new work, finding Tyles, Mortar, Laths, and Nails, and striking of the Barge-courses, at 30 or 32 s. the square; and for Riping of old work, and new covering, and making good the old, they account 12 or 14 s. the square, according as they find the old Tyling.

P. I think that we have dealt with all now but the Carpenters, and how do they agree and measure their work?

*C. Carpenters do commonly work by the square of 10 foot, in erecting their Carcas, that is, the framing and setting up with their Partitions, Floors, Rafters, and such like. The proportions of the several Scantlings, for several buildings small and great, you have given you in the Table foregoing, and their work is to be valued according to the goodness of the Timber, and the quantity, and the place, (as was before intimated) and thus in running buildings they
account*

account 15 or 20 s. the square, and some may deserve 30 s. or more, and to a square of a good Carcas, 20 foot of good Timber Rough may be allowed. For flooring, the Timbers of the Scantlings before, serve in most cases, and these well wrought and laid well into the brickwork, as the Summers 10 or 11 inches into the brickwork at either end: These floors are valued as the Carcas was, according to the quantity and goodness of the Timber, and place, and there are several rates, as from 20 s. to 40 s. the square. In framing the Roofe, there is farr more trouble than in the rest of the building, and therefore is commonly reckoned 4 or 5 s. in the square more.

P. Do they add the boarding of the Rooms into this rate?

C. No, that is a work by it self, and is various as the other, for they are valued by the square of 10 foot, according to the goodness of the stufte, as from 12 s. to 20 s. the square; but if the boards be found by the builder, then they allow commonly for plaining, joynting, and laying of boards, 4 or 5 s. a square, besides Nails, of which 200 is a competent allowance for one square of flooring.

P. There is one thing yet remaining, in which if you satisfie me, I think I shall cease farther to trouble you at this time.

C. What is that?

P. Concerning Doors, Shop Windows, Window frames, Stairs, Chimneys, and the like.

C. Of these I shall give you a particular account; and first of Doors.

1. Doors

1. *Doors* made of plain whole Deal, are valued commonly at 3 *d.* or 4 *d.* the foot, if rebated for Stuffle, Nails, Workmanship, &c. but double doors Battoned, and made Wanscote fashion, they are about 7 *d.* the foot; and in these you may rise and fall your price as you please, as you may in all the rest.

2. *Shop Windows*, These for the Carpenters work are to be valued as the Doors were, and at the same rates; the Iron work at the prizes of ordinary Bolts, Hinges, &c.

3. *Window Frames*, For these they usually agree by the Lights; so that if a Window of Oak have 4 Lights in it, and be double Rabited (as the Carpenters call it) they usually reckon 3 *s.* a Light for materials and workmanship. But if the Builder find Timber and Sawing, then 1 *s.* a Light is fair.

4. *Stairs and Stair-cases*, An ordinary pair of Stairs of about 6 and 4 foot, with Flyers and Winders, made of Elme Boards, are accounted to be worth 2 *s.* 6 *d.* or 2 *s.* 8 *d.* a step, the workman finding all materials, as Boards, Nails, &c. but if the materials be found at the Owners charge, then 9 *d.* or 10 *d.* a step for workmanship is a good allowance; But for Stair Cases, which have a Well or Light coming from the top to the bottome, with a Landing at every 6 *ft.* or 8 *ft.* step, the Stairs being about 3 foot all the way, these Stairs with the Rails, Ballasters, Posts, Balls, Pendants, and other Ornaments, may very well be worth 4 *s.* 4 *d.* or 4 *s.* 6 *d.* the step.

5. *Chimneys*, The Bricklayer values them by the Rod, and at the same rate as other work,
but

but then in measuring he Girts them, which (if he find Materials) gives sometimes one third part of bricks more than is used; but for that, (in respect there is very great difficulty in the true measuring of Chimney-work) they generally agree for so much an Hearth, and the workman taking the whole Stack together, from top to bottome of the building, he finding all Materials, and Plaistering of the insides, between 40 s. and 50 s. a Chimney is a fair rate; but if the owner find Materials, then about 15 s. is an indifferent price for workmanship. In Cellars, Vaults, and for many other purposes, Arch-work in brick is not only convenient, but necessary for many Professions and Trades. This work the Bricklayer performs by the Rod also; But for that there is trouble in making the frames for to lay the Arch upon, and more Art in laying of the Bricks, he may well deserve 10 or 12 s. a Rod more for this, than for ordinary work. And now I hope I have fully satisfied you.

P. You have given me very ample satisfaction in every particular; and remembering what you have told me, I shall be the better prepared to deal with my Workmen, than I was before, and shall not (I am sure) run into those grand Errors, which so many unadvised Builders daily do.

*A Supplement to the Second Book, containing
Necessary Rules and Observations, deduced
from what hath been delivered in the fore-
going Dialogue concerning Building.*

I. In Valuation.

IN the Preceding Discourse, you have the Names, Natures, Qualities and Prizes, both of Materials which concern building, and of workmens wages, promiscuously inserted, according as the Discourse did give occasion. Now, forasmuch as the chief use of building (for the present) will be in the City of London, where the late Fire made so generall a Consummation; The King and Parliament have Prescribed and Enacted a Form and Method for the Re-building of the same, I will here (the foregoing Rules being general) particularly set rates upon the several Materials, and also upon the Works of several Artificers appertaining to building, near unto what they now are; and from those rates, deduce a near Estimate of what houses of several Dimensions, both in High and Principall Streets, as also in Streets and Lanes of Note, will cost the new erecting, they being built with such Materials, and in the same Manner and Form as the Act Enjoyns. Supposing therefore,

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Bricks, the Thousand.—	00	16	00
Tyles, the Thousand.—	01	05	00
			Lime,

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Lime, the Hundred. —————	00	10	00
Sand, the Load. —————	00	03	00
Oak } Timber, the Load. —————	02	15	00
Fir } —————			
Deal-boards, the Hundred. ———	07	10	00
Laths, the Bundle. —————	00	01	08

Then for Plasterers work.

Lathing, Plastering, Rendring } & washing with Size, the yard. }	00	01	02
Lathing and Plastering the yard.	00	00	10
Plastering and Sizeing, the yard.	00	00	06

For Smiths work.

For Iron Balconies, the Pound. ———	00	00	5 ¹ / ₂
Folding Casements, the Pair. ———	00	16	00
Ordinary Casements —————	00	04	06

For,

Window Frames, the Light. ———	00	03	00
Glazing ordinary, the Foot. ———	00	00	06
Wrought Lead, the Hund. gross. ———	00	18	00

For Painting.

Window Lights. —————	00	00	06
Shop Windows, Doors, Pails, } &c. the Yard. —————	00	01	00

From

*From these Rates of Materials for Building, and
for Workmanship.*

A House in a high and Principal Street, built
according to the Statute of Car. 2.

	foot	foot		l.		l.
Containing in Breadth.	{ 20 18 and 24 in 18 depth 14 10	{ 44 40 25 26 28 18	{ will Cost building about	{ 450 380 330 260 240 150	{ and in a Street or Lane of Note, about	{ 360 300 250 230 185 100

Now forasmuch as the buildings in *London*,
joyn one upon another, and almost every seve-
ral house hath a distinct Proprietor, the Parlia-
ment have Decreed, that the Wall dividing each
Proprietors Ground, shall be built at the equal
Charge of both the Owners; it will be imperti-
nent to shew how these Party-walls are to be
valued.

As I said before, all Brickwork, whether it be
of One, Two, Three, Four, or any other num-
ber of bricks lengths in thickness, they are all to
be reduced to the thickness of one brick and
half.

By what hath been before delivered, you find
that 4500 of Bricks, One hundred and a quarter
of Lime, Two Load and a half of Sand, will com-
pletely raise one Rod of Brickwork of a Brick
and half thickness. Now,

	<i>l.</i>	<i>s.</i>	<i>d.</i>
4500 of Bricks, at 16 s. the 1000 is	03	12	00
A hundr. & quarter of Lime, at 10 s.	00	12	06
Two Load and half of Sand, at 3 s.	00	07	06
	In all—04—12—00		

And thus much will the Materials of a Rod of a Party-wall reduced a brick and half thick, amount unto at the former supposed rates. To which may be added for Workmanship—01—08—00

The Sum is—06—00—00

So that for every Rod that is in a Party-wall, between Proprietor and Proprietor, they are to allow 3 l. a piece for every Rod of Party-wall. So that if a Party-wall being measured, and the measure reduced to a brick and half, should be found to contain 16 Rod, that 16 being multiplied by 3 l. giveth 48 l. and so much is the one Proprietor to allow the other.

But note by the way, that although this rule here delivered be generall, yet the price of the Party-wall will be more or lesse, according as materials rise or fall.

II. In Mensuration.

WHereas throughout this Discourse, there is continual mention made of *Measuring*, It may be expected that I should say something thereof in this place; but I shall desist, for that

I

I have long since sufficiently treated of Surveying or Measuring of Land in my Treatise, Entituled, *The Compleat Surveyor*. And for the Mensuration of all manner of Superficies and Solids, I have (in a small Treatise by it-self, lately Published, Entituled, *The Line of Proportion made Easie*,) taught how to Measure *Timber, Stone, Board, Glass, Pavement*, and the like, by a new, easie, and most exact way. And therefore I shall in this place say nothing thereof; only I will give you an account of a Survey of Building, by which you may see the manner and form of measuring; which take as followeth.

A Survey of Building Erected by M. G. for R. S. the thickness of the Walls (as by agreement) Brick and half, at 3 l. the Rod for Workmanship and Mortar, the Dimensions taken as followeth.

	foot	parts	
1. The length of one side—	40	50	} 648 5
From the Foundation to the Raising—	16		
2. The breadth at one end—	17	16	} 283 14
The height to the crosse Beam—	16	5	
3. A partition Wall within	17	16	} 180 18
Height to the first Story—	10	5	
4. The length of the other side—	39	33	} 275 31
From an old Wall to the Raising—	7		
K			5. The

	foot	parts	
5. The breadth at the other end —————	17	82	11
From the Floor to the Crosse Beam —————			
	4	83	

Particulars to be added.

	foot	parts	
6. A Water Table 30 foot, reduced to —————	7	5	23
From the Foundation to the Table —————			
	3	16	70
7. A setting off on the other side of the house —	16	83	16
			83
8. A Cable end —————	66	66	

The Total Area or Content of these Dimensions. — } 1575 77

Particulars to be deducted.

	foot	parts	
1. One Door Cafe { Broad — 9	9	42	81
{ High — 8			
2. Another Door Cafe { Broad — 7	7	42	32
{ High — 4			
3. A third Door Cafe { Broad — 5	5	16	22
{ High — 4			
4. A Window Cafe { Broad — 4	4	5	20
{ Deep — 4			

5. Ano-

		foot	parts	
5. Another Win-	{ Broad—	4	5	} 20 25
dow Case.—	{ Deep—	4	5	

The Total of these Deductions—176 55

Taken from the Total—1575 77

Rests due to the Bricklayer—1399 22

Which reduced into Square Rods, is 5 Rod 13 parts, which is 5 compleat Rod, and something above half a quarter of a Rod.

And so according to contract, there will be due to the Bricklayer,——15*l.* 10*s.* 1*d.*

III. Of the Timber Members belonging to any Building, their Names and Manner of Framing.

IN the foregoing discourse, there is often mention made of *Rafters*, *Girders*, and other Members appertaining to the Timber-frame, or (as I before call it) the Carcas of a House, I have here by several designs delineated the same, marking each particular Member with a several Letter of the Alphabet, by which they may be known, and properly Termed. And,

See the Figure at the end of this Second Book.

I. Of the Floor.

If the Building be of Brick ; Then

- A* Represents the thickness of the Wall, and Lintale or Wall-plate. But in Timber-work it is called a Bressummer.
- B* The Summer.
- C* The Girders framed into the Summer.
- D* The Joysts.
- E* The distance between Joyst and Joyst.
- F* The Trimmers for the Chimney way.
- G* The Trimmers for the Stare-Case, or Well-hole for the Stairs.

II. Of the Roof.

- AB* Represents the half breadth of the House, with Cantalirers, Cornice, and Eves.
- AC* The length of the Rafters and Furrings, which in Buildings from 20 to 30 foot wide, or thereabouts, must be three quarters of the breadth of the house; so that if the House be 28 foot broad, the length of the Rafters must be 21 foot.
- I* Janmes, or Door-Post.
- K* King-piece, or Joggle-piece.
- L* Struts.
- M* Coller-beam, Strutt-beam, Window-beam, or Top-beam.
- N* The Door-head.
- O* Principal Rafters.

P. Fur-

- P** Furrings or Shreadings.
Q Ends of the Lintels, and Pieces.
R Bedding Moldings of the Cornice over the Windows, and the Space between.
S Knees of the Principal Rafters.
T Purling Mortices.

III. *Of the Timbers in the upright Walls.*

- A** Represents the Ground-plate.
B Girders, Binding, Interduces, or Bressummers.
C Beam to the Roof, or Girder to the Garret Story.
D Principal Post when the building is all Timber, or upright Brick-wall, when of Brick.
E Braces.
F Quarters.
G Interduces.
H Prick-post, or Window-post.

IV. *Of a Cable end.*

- A** The Summer or Beam.
B The King-piece, Crown-post, or Joggle-post.
C Braces or Strutts.
D Principal Rafters.
E The Sleeper.
F The Purline of the Dormer.
G The Principal Rafter of the Dormer.
H Single Rafters of the Dormer, which stand on the Sleeper and Purline.

- I* The Point of the Sleeper.
K L The thickness of the Wall and Lintels, or Wall-plates.

V. Of a Hip Roof.

- A A* Half the breadth of the Roof 12 foot 6 inches.
A B The length of the Hip or Sleeper, 22 foot 6 inches, which you may find by help of the Table of the Square of unequal sided Timber, in the third Book following: or by the Gunter's-Line upon your Ruler thus:
 Upon your Line take alwayes the distance between 10 and 9, then setting one foot of the Compasses in the breadth of your house, the other foot will reach downward to the length of your Hip or Sleeper. Thus the house being 25 foot broad, the Compasses opened from 10 to 9, will reach from 25 (the breadth of the house) to 22 foot and a half, the length of the Hip or Sleeper.
E D The Perpendicular heighth of the Roof which is found by extending the Compasses from *A* to *C*, and drawing the arch line *C G F*, cutting the Lintell in the point *F*. So is the line
F C The perpendicular heighth of the Roof.

VI. Of Flat Roofs.

- A* The Camber Beam.
- B* The Principal jogled into the Camber-beams at C.
- C* The Puncheons or Braces.
- D* The Drips to walk on.
- E* The Battlements.

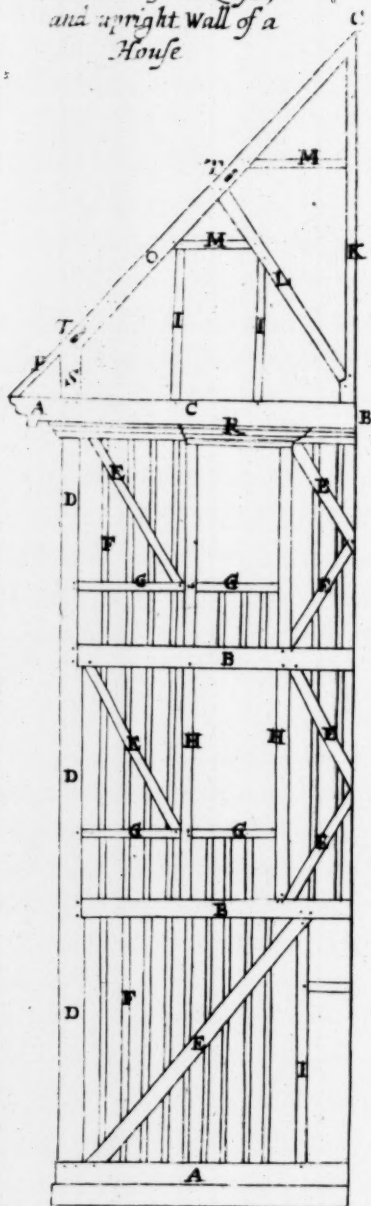
And thus much at present shall suffice concerning Roofs, and the former general Rules will serve if the building be Square; but if the Roof be Bevel, then the Bevel line shall be the line by which the Back and Hip Rafter shall be made.

The End of the Second Book.

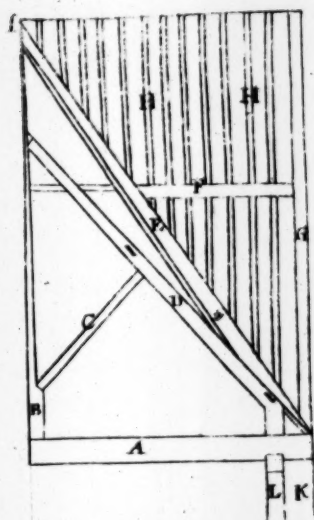
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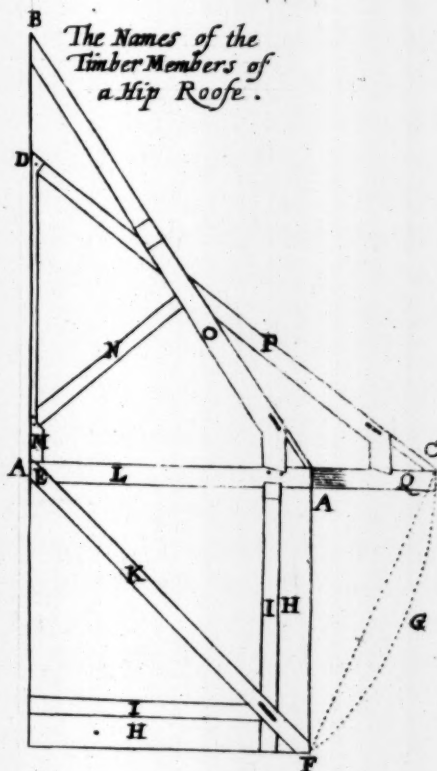
The Names of the Timber
Members of a Rooffe,
and upright Wall of a
House



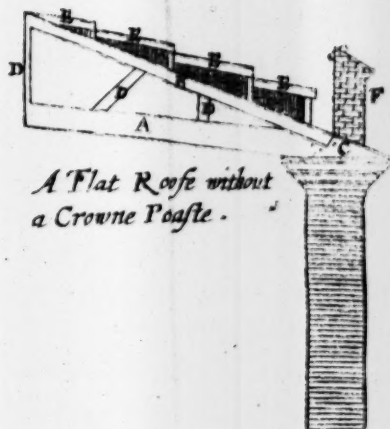
A Gable end



The Names of the
Timber Members of
a Hip Rooffe.



Flat Rooffes.

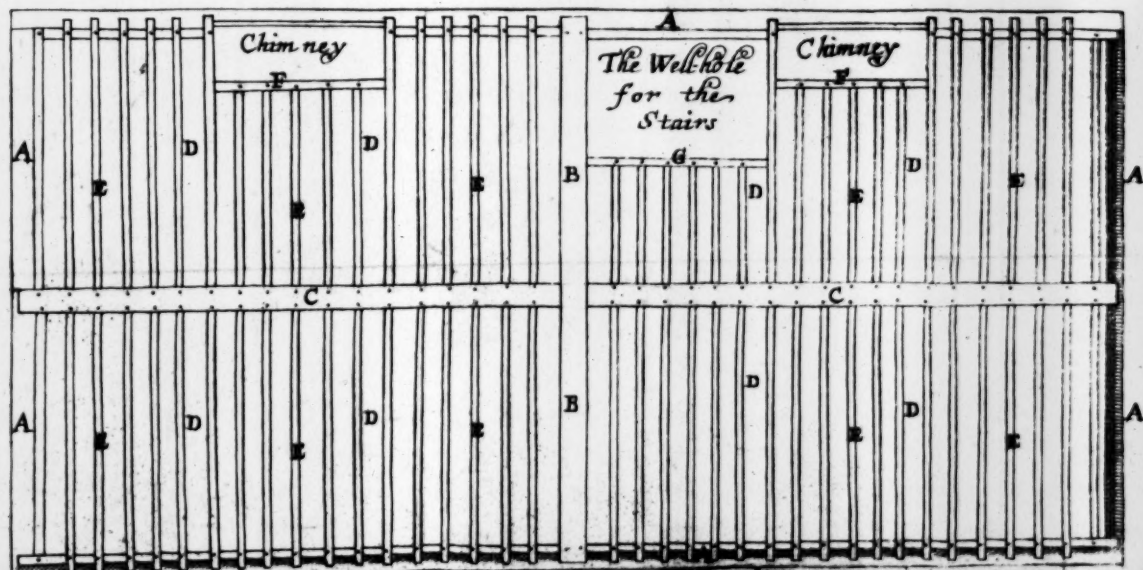


A Flat Rooffe without
a Crowne Poofte.



A Flat Rooffe with
a Crowne Poofte.

The Names of the Members of a Floore



Place this figure at the end of the Second Book.



F
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A MATE
FOR
MEASURERS.

THE THIRD BOOK.

CONTAINING
TABLES

Ready Calculated,

For the Mensuration of all such *Materials*, as
any wise appertain to *Building*.

AS
Board, Timber, Stone, &c.

ALSO,
For the Mensuration of the *Works* of the several
Artificers employed in *Building*.

AS THE
Carpenters, Brick-layers, Masons, Plaisterers,
Glasiers, Foyners, Painters, Pawiers, &c.

Whether their *Works* be measured by the Foot,
Yard, Square, or Rod.

The Dimensions being taken only in Feet and
Inches.

By *William Leybourn*.

London, Printed in the Year, 1668.

MEASURES

THE

TABULAR

OF

BOARD



Supplies, and other matters,
of the Board of Trade, London.

By J. Smith, London.

Printed by J. Smith, London.



To the Reader.

Considering of what absolute necessity the Art of Measuring is in the Work of Building, as in the buying of the Materials thereunto belonging, as Board, Timber, Stone, &c. And also in the measuring of the Works of the several Artificers employed therein, as Carpenter, Bricklayer, Mason, Plaisterer, Glasier, Joyner, Painter, and Pavier, All which, measure their respective Works either by the Foot, Yard, Square of 10 Foot, Rod, or the like. And also taking notice how few (of the great number of) Artificers are capable of Measuring of their own Work, although there is scarce one of them, but hath upon his Two-foot Rule, a Line (which he calls Gunter's Line) by which all kind of Measures both Superficial and Solid, may be both speedily and exactly performed; the uses of which Line, I have lately published at large. Yet notwithstanding these helps, I finding (by experience) the deficiency of many Artificers, in this particular, to be such, that they can in no wise

wise be made capable of understanding the same without a Tutor. And again, considering the great benefit which will redound to such Gentlemen, Citizens, and others, that have occasion to buy Materials for, and also to compute the Charge of, their building themselves in every particular, I have here again taken the pains to Calculate Tables, by which any person (who knows but figures, and can but add two numbers together) may be able to measure Board, Timber or Stone, As also all Carpenters, Bricklayers, Plaisterers, Glasiers, Joyners, Painters or Paviers Works, either by the Foot, Yard, Square, Rod, or the like, with wonderfull ease and exactness; Measuring only the Length and Breadth of the Work (what ever it be) by a Two Foot Rule divided into Inches and parts; Which Tables, with the Uses of them, exemplified in all the forementioned particulars, are here presented unto thee (for thy use and benefit) by,

Will. Leybourn.



A MATE FOR MEASURERS.

Of Measures in General.

M *Easures* are of three Kinds.

1. *Lineal*. 2. *Superficial*. 3. *Solid*.

1. *Lineal Measure*, Is the measuring of any thing that hath only *Length*, without sensible *Breadth* or *Thickness*; As the length of a *Line*, *Chain*, *Pole*, or the like.

2. *Superficial Measure*, Is the measuring of any Substance that hath *Length* and *Breadth* only, without any sensible *Thickness*, as *Land*, *Board*, *Glasse*, *Pavement*, *Plastering*, *Painting*, *Wainscoting* of Rooms, &c.

3. *Solid Measure*, Is the measuring of any Substance that hath *Length*, *Breadth*, and *Thickness*, as *Timber*, *Stone*, &c.

Now the *Measures* confirmed by Statute, and now principally used in *England*, are these,

1. *A Foot*.
2. *A Yard*.
3. *A Rod, Pole, or Perch*.

And

And these Measures have their Original from a *Barley Corn*, for it is confirmed by the Statute of E. 3. That,

3 *Barley Corns* in length should make an *Inch*.

12 *Inches*, a *Foot*.

3 *Foot*, a *Yard*.

16 *Foot* and an half, a *Rod*, *Pole*, or *Perch*.

From hence it follows, That

One *Foot* in *Length* contains only 12 inches ;
But,

A *Foot Superficial*, or in *Length* and *Breadth*, contains 12 times 12 inches, that is, 144 inches. And by this measure, is *Board*, *Glasse*, and *Paving* with *Free Stone*, measured. And,

A *Foot Solid*, consisting of *Length*, *Breadth*, and *Thickness*, contains 12 *Superficial* feet, that is, 12 times 144 inches, which is 1728 inches. And by this measure is *Timber*, *Stone*, and such like, measured. Again,

A *Yard* in *Length* only contains 3 *Foot* ; but a *Yard* in *Length* and *Breadth*, contains 3 times 3 foot, that is 9 foot. And by this measure do *Plaisferers*, *Painters*, *Joiners*, and *Paviors*, measure their work. Likewise,

A *Pole*, *Rod*, or *Perch*, contains in *Length* only 16 foot and an half ; But a *Rod* in *Length* and *Breadth*, contains 16 times and an half, 16 foot and an half, that is 272 foot and a quarter. And by this kind of measure, *Land*, and *Bricklayers-work*, is chiefly measured.

There is another kind of Measure used much in Building, but principally in the *Carpenters* and

and *Bricklayers* Works ; and they call it the *Square of 10*, that is, 10 *Foot in Length*, and 10 *Foot in Breadth*, that is, 10 times 10 foot, in all, 100 Foot. And by this Measure *Carpenters* measure their *Flooring*, and *Bricklayers* their *Tyling*.

Thus much for the *Explanation* ; I will now shew you the *Use* of the several Tables.

A

A *TABLE* Shewing how much in Length of any *Board, Plank, Pain of Glasse, Pavement,* or the like, doth make a *Foot Square*, the Breadth thereof being given.

	F. In.		F. In.		Pts.
0	1	12	0	0	0
	2	6	0	0	0
	3	4	0	0	0
	4	3	0	0	0
	5	2	4	8	
	6	2	0	0	0
	7	1	8	6	
	8	1	6	0	0
	9	1	4	0	0
	10	1	2	4	
	11	1	1	1	
I	0	1	0	0	0
	1	0	11	8	
	2	0	10	3	
	3	0	9	6	
	4	0	9	0	0
	5	0	8	5	
	6	0	8	0	0
	7	0	7	2	
	8	0	7	2	
	9	0	6	8	
II	0	0	6	5	
	1	0	5	3	
	2	0	5	3	
	3	0	5	3	
	4	0	5	1	
	5	0	5	0	0
	6	0	4	8	
	7	0	4	7	
	8	0	4	5	
	9	0	4	4	
III	0	0	4	2	
	1	0	4	1	
	0	0	4	0	

The Breadth of the Board in Feet and Inches.

The Length of a Foot Square, in Feet, Inches, and 10th parts of Inches.

An Explanation of this Table.

THE Table consisteth of two Rows or Columns, In the first of which, towards the left hand, is set down the breadth of the Board, or other thing to be measured, in Feet and Inches, beginning at 1 Inch, and so downwards by 2 Inches, 3 Inches, 4 Inches, &c. to 11 Inches. Then 1 Foot, & still downwards 1 Foot 1 Inch, 1 Foot 2 Inches, &c. to 11 Foot. — Then in the second Row or Column, that towards your right hand, Against any breadth in the first Column, you have how many *Feet, Inches*, and tenth parts of an *Inch* in length, do make a *Foot Square*. The

The Use of this Table by Examples.

Example 1. If a board be 9 inches broad, how much in length of that board will make a foot?

Look for 9 inches, in the first Column of the Table, towards your left hand, and right against it, in the second Column, you shall find 1. 4. 0. which is, 1 foot, 4 inches, and no parts of an inch; and so much in length, of a board 9 inches broad, must go to make a foot; so that every 16 inches in length, is a foot, and so many times as 16 inches is contained in length of the board, so many foot are there in the board. And so every 8 inches, is half a foot; And every 4 inches, a quarter of a foot, &c.

Example 2. If a board be one foot and 5 inches broad, how much thereof in length shall make a foot?

Look in the Table for 1. foot, 5 inches, in the first Column, and right against it in the second Column, you shall find 0. 8. 5. which is, no feet, 8 inches, and 5 tenth parts of an inch, (which is half an inch, for 5 is the half of 10.) wherefore 8 inches, and 5 tenths of an inch, (or 8 inches and an half) in length, do make a foot, of that board: and so often as 8 inches and half is contained in the length of that board, so many Square or Superficial feet are in it.

Example 3. If a board be two foot and 11 inches broad, how much thereof in length, will make a foot Square?

Look in the first Column of the Table for II. foot, 11 inches, against which you shall find 0. 4. 1. that is, no feet, 4 inches, and 1 tenth part of an inch; so that 4 inches, and one tenth part of an inch, in the length of that board, will make a foot Square. And so many times as 4 inches, and one tenth part of an inch, is contained in the length of the board, so many Square feet are contained therein.

Wherefore take in your compasses 4 inches, and one tenth part of an inch, from your Rule, and run that along the board from end to end, and that will tell you how many feet are contained in the Board.

Example 4. If a board be 3 foot eight inches broad, how much thereof in length, will make a foot Square.

If you look in the Table for 3 foot 8 inches, you cannot find it there, because the Table reacheth only to III. foot, or 36 inches broad, and broader you will find few boards. But in case you do, (as in this Example) the Table will still answer your desire.

For, This board being 3 foot 8 inches broad, take the half thereof, which is, I. foot 10 inches: and find that in the Table, against which you shall find 6 inches, and 5 tenths, (or half an inch) and

and so much in length of that board will make 2 foot Square, because you took but half the breadth, or, half 6 inches 5 tenths, which will be 3 inches, and 3 tenths, (near) will make one foot, you may use which you please.

These Examples are sufficient for the use of this Table; but I will give you Examples in some other Cases;

Example 5. If a Pain of Glasse be 8 inches broad, how much thereof in length, will make a foot?

Look 8 inches in the first Column of the Table, and against it, in the second Column, you shall find 1 foot 6 inches (which is 18 inches) and so much thereof in length, will make a foot Square; and so running 18 inches along the Pain, so often as you find it in the length, so many foot are in the Pain. But when you come towards the end, if there be any odd measure besides the even 18 inches, you must allow for 9 inches, half a foot; for 4 inches and a half, a quarter of a foot; and for 2 inches and a quarter, half a quarter of a foot; and the like you must do in measuring of board, or any other thing of the like kind.

Example 6. *There is a Causey or Walk paved with Fret-Stone, the breadth whereof is 2 foot 5 inches, how much thereof in length will make a foot Square ?*

Look for II. foot 5 inches in the first Column
of the Table, and against it you shall find o. 5. o.
L 3 that

that is, no feet, 5 inches, and no parts; so that 5 inches in length thereof, will make a foot Square. Wherefore, so often as 5 inches is contained in the length of the Causey, so many feet are in it; and if at the end there remain any odde measure, being 5 inches makes a foot, 2 inches and a half, must make half a foot, and one inch and a quarter, one quarter of a foot, &c.



A



A
TABLE

O F

Superficial (or Flat) Measure,

A S

Board, Glass, Pavement, or the like,
Ready cast up;

From One Inch, to 36 Inches broad,

A N D

From One Foot to 20 Foot in length.

And consequently (by help of Addition only)
to any Greater Length or Breadth.



The length of the Board, Planck,

Inch.	1		2		3		4		5	
	f.	Pt.	f.	Pt.	f.	Pt.	f.	Pt.	f.	Pt.
1	0	08	0	16	0	24	0	32	0	40
2	0	17	0	34	0	51	0	68	0	85
3	0	25	0	50	0	75	1	00	1	25
4	0	33	0	66	0	99	1	32	1	65
5	0	42	0	84	1	26	1	68	2	10
6	0	50	1	00	1	50	1	00	2	50
7	0	58	1	16	1	74	2	32	2	90
8	0	67	1	14	2	01	2	68	3	35
9	0	75	1	50	2	25	3	00	3	85
10	0	83	1	66	3	49	3	32	4	15
11	0	92	1	84	2	76	3	68	4	60
12	1	00	2	00	3	00	4	00	5	00
13	1	08	2	16	3	24	4	32	5	40
14	1	17	2	34	3	51	4	68	5	85
15	1	25	2	50	3	75	5	00	6	25
16	1	33	2	66	3	99	5	32	6	65
17	1	42	2	84	4	26	5	68	7	10
18	1	50	3	00	4	50	6	00	7	50
19	1	58	3	16	4	74	6	32	7	90
20	1	67	3	34	5	01	6	68	8	35
21	1	75	3	50	5	25	7	00	8	85
22	1	83	3	66	5	49	7	32	9	15
23	1	92	3	84	5	76	7	68	9	60
24	2	00	4	00	6	00	8	00	10	00
25	2	08	4	16	6	24	8	32	10	40
26	2	17	4	34	6	51	8	68	10	85
27	2	25	4	50	6	75	9	00	11	25
28	2	33	4	66	6	99	9	32	11	65
29	2	42	4	84	7	26	9	68	12	10
30	2	50	5	00	7	50	10	00	12	50
31	2	58	5	16	7	74	10	32	12	90
32	2	67	5	34	8	01	10	68	13	35
33	2	75	5	50	8	25	11	00	13	85
34	2	83	5	66	8	49	11	32	14	15
35	2	92	5	84	9	76	11	68	14	60
36	3	00	6	00	9	00	12	00	15	00

The breadth of the Board, Planck, Pavement, or the like, in Inches.



Pavement, or the like, in Feet.

The breadth of the Board, Plank, Pavement, or the like, in Inches.

inch.	6		7		8		9		10	
	f.	Pt. f.	Pt. f.	f.	Pt. f.	Pt. f.	Pt. f.	f.	Pt. f.	Pt.
1	0	48	0	56	0	64	0	72	0	80
2	1	01	1	19	1	36	1	53	1	70
3	1	50	1	75	2	00	2	25	2	50
4	1	98	2	31	2	64	2	97	3	30
5	2	52	2	94	3	36	3	78	4	20
6	3	00	3	50	4	00	4	50	5	00
7	3	48	4	06	4	64	5	22	5	80
8	4	01	4	69	5	36	6	03	6	70
9	4	50	5	25	6	00	6	75	7	50
10	4	98	5	81	6	64	7	47	8	30
11	5	52	6	44	7	36	8	28	9	20
12	6	00	7	00	8	00	9	00	10	00
13	6	48	7	56	8	64	9	72	10	80
14	7	01	8	19	9	36	10	53	11	70
15	7	50	8	75	10	00	11	25	12	50
16	7	98	9	31	10	64	11	97	13	30
17	8	52	9	94	11	36	12	78	14	20
18	9	00	10	50	12	00	13	50	15	00
19	9	48	11	06	12	64	14	22	15	80
20	10	01	11	69	13	36	15	03	16	70
21	10	50	12	25	14	00	15	75	17	50
22	10	98	12	81	14	64	16	47	18	30
23	11	52	13	44	15	36	17	28	19	20
24	12	00	14	00	16	00	18	00	20	00
25	12	48	14	56	16	64	18	72	20	80
26	13	02	15	19	17	36	19	53	21	70
27	13	50	15	75	18	00	20	25	22	50
28	13	98	16	31	18	64	20	97	23	30
29	14	52	16	94	19	36	21	78	24	20
30	15	00	17	50	20	00	22	50	25	00
31	15	48	18	06	20	64	23	22	25	80
32	16	01	18	69	21	36	24	03	26	70
33	16	50	19	25	22	00	24	75	27	50
34	16	98	19	81	22	64	25	47	28	30
35	17	52	20	44	23	36	26	28	29	20
36	18	00	21	00	24	00	27	00	30	00

The length of the Board, Planck,

Inch	11		12		13		14		15	
		Pt. f.		Pt. f.		Pt. f.		Pt. f.		Pt.
1	0	88	0	96	1	04	1	12	1	20
2	1	87	2	04	2	21	2	30	2	55
3	2	75	3	00	3	25	3	50	3	75
4	3	63	3	96	4	29	4	60	4	95
5	4	62	5	04	5	46	5	88	6	30
6	5	50	6	00	6	50	7	00	7	50
7	6	38	6	96	7	44	8	11	8	70
8	7	37	8	04	8	71	9	38	10	05
9	8	35	9	00	9	75	10	50	11	25
10	9	13	9	96	10	79	11	62	12	45
11	10	12	11	04	11	96	12	88	13	80
12	11	00	12	00	13	00	14	00	15	00
13	11	83	12	96	14	0	5	12	16	20
14	12	87	14	04	15	2	16	30	17	55
15	13	7	15	00	16	25	17	50	18	75
16	14	63	15	96	17	29	18	60	19	95
17	15	62	17	00	18	44	19	88	21	30
18	16	50	18	00	19	50	21	00	13	50
19	17	38	18	96	20	5	2	12	24	70
20	18	37	20	04	21	71	13	38	5	05
21	19	35	21	00	22	75	4	50	27	25
22	20	1	21	96	23	4	25	62	18	45
23	21	12	23	04	24	9	16	88	29	80
24	22	00	24	00	26	00	18	00	30	00
25	22	88	24	96	27	04	19	1	31	20
26	23	87	26	04	28	21	30	38	32	55
27	24	75	27	00	29	25	31	50	33	75
28	25	63	27	96	30	29	32	62	34	95
29	26	62	29	04	31	46	33	88	36	30
30	27	50	30	00	32	50	35	00	37	50
31	28	38	30	96	33	54	36	12	38	70
32	29	37	32	04	34	71	37	38	40	05
33	30	35	33	00	35	75	38	5	41	25
34	31	13	33	96	36	79	39	60	42	45
35	32	12	35	04	37	96	40	88	43	80
36	33	00	36	00	39	00	42	00	45	00

The breadth of the Board, Planck, Pavement, or the l.k., in inches:

Pavement, or the like, in Feet.

The breadth of the Board, Plank, Pavement, or the like, in Inches.

Inch.	16		17		18		19		20	
	F.	IN. L.	F.	IN. L.	F.	IN. L.	F.	IN. L.	F.	IN. L.
1	1	28 1	3	1	4	1	5	1	6	0
2	1	72 1	8	1	06	3	23	3	4	0
3	4	00 1	25	1	50	4	75	5	00	0
4	5	28 5	6	5	94	6	27	6	60	0
5	6	72 7	12	7	56	7	93	8	40	0
6	3	00 8	5	8	00	9	50	10	00	0
7	9	28 9	8	9	44	11	60	11	60	0
8	10	72 11	39	12	06	12	73	13	40	0
9	12	00 12	75	13	50	14	25	15	00	0
10	13	28 14	11	14	94	15	77	6	60	0
11	14	72 15	64	16	56	17	43	13	40	0
12	16	00 17	00	18	00	19	00	20	00	0
13	17	28 18	36	19	44	20	52	21	60	0
14	18	72 19	89	21	06	22	23	23	40	0
15	19	00 21	25	22	50	23	75	25	00	0
16	20	28 22	61	23	94	25	20	26	60	0
17	21	72 24	14	25	58	26	98	28	40	0
18	23	00 25	50	27	00	28	50	30	00	0
19	24	28 26	86	28	44	30	01	31	60	0
20	26	72 28	39	30	06	31	73	33	40	0
21	27	00 29	75	31	50	33	25	35	00	0
22	29	28 1	11	32	94	34	77	36	60	0
23	30	72 32	64	35	56	36	48	38	40	0
24	32	00 34	00	36	00	38	00	40	00	0
25	33	28 35	36	37	44	39	53	41	60	0
26	34	72 36	89	39	06	41	23	43	40	0
27	35	00 38	25	40	50	42	75	45	00	0
28	36	28 39	61	41	94	44	27	46	60	0
29	37	72 41	14	43	56	45	98	48	40	0
30	39	00 42	50	45	00	47	50	50	00	0
31	40	28 43	86	45	44	49	01	52	60	0
32	41	72 45	39	47	06	50	73	53	40	0
33	43	00 46	75	49	50	52	25	55	00	0
34	44	28 48	11	50	94	53	77	56	60	0
35	45	72 49	64	52	56	55	48	58	40	0
36	48	00 51	00	54	00	57	00	60	00	0

An Explanation of the Table.

THE foregoing Table shewed how much in length of any board, &c. whose breadth was given, did make a Square foot. But this Table (by having the length and breadth of any Board, &c. given in feet and inches) tells you readily how many feet, and part of a foot, are contained in it.

The Table consisteth of 21 *Columns*, noted at the head of each of them with Arithmetical figures, 1. 2. 3. 4. &c. to 20. which represent so many feet in the length of any thing to be measured. The first Column of this Table towards the left hand, hath the word *Inches* at the head thereof; and the figures of that Column begin at 1, and go downwards by 1, 2, 3, &c. to 36 inches, representing the breadth of any thing to be measured. So that if you measure the *length* and *breadth* of any thing, and find the *breadth* in the *side* of the Table, and the *length* at the *head*, the number which stands in the common meeting of these two numbers, is the content of the thing so measured in *feet*, and *hundred* parts of a foot: The use hereof shall be made evident by Examples.

Example 1. *There is a Plank which is 33 inches broad, and 10 foot long, how many square feet is there in that Plank?*

Find 33 inches (the breadth of the Plank) in the

the first Column of the Table, towards the left hand, under the word *Inches*. Then, having found 33, look along that line, towards the right hand, till you come to that Column which hath 10 foot (the length of the Plank) at the head of it, and there you shall find 27, 50, which shews, that there is 27 foot, and 50 hundred parts of a foot, (which is half a foot) contained in that plank, whose breadth is 33 inches, and length 10 foot.

Or, if you look first for 10 foot in the head of the Table, and draw your finger (or cast your eye) down that Column under 10, till you come against 33 in the first Column, you will there also find the same number 27, 50, as before; which is 27 foot and a half.

Example 2. A Glazier hath glazed a window, containing 8 Pains of glass, the depth of each Pain being 29 inches, and the length of all the 8 Pains together, are 13 foot, how many foot of glazing is there in that Window?

Look for 13 foot at the head of the Table, then look down that Column, till you come against 29 inches in the first Column, and there against 33 inches, and under 13 foot, you shall find 31, 46. which shews that there is 31 foot, and 46 hundred parts of a foot, of glazing in those 8 Pains of Glass; this 46 hundred parts, is almost half a foot, for a foot being divided into 100 parts, 25 parts is a quarter of a foot, 50 parts is half a foot, and 75 parts is three quarters of a foot; and nearer than to a quarter of a foot you need not go.

Ex-

Example 3. *A Walk of Free-Stone being 20 foot long, and 30 inches broad, how many square feet are contained therein?*

Look for 20 foot in the head of the Table, and for 30 inches in the first Column, then down that Column, under 20, and against 30 inches in the first Column, you shall find 50, 00, which shews that there is just 50 foot in the Pavement of that Walk which is 20 foot long, and 30 inches, or 2 foot 6 inches broad.

Example 4. *There is a Foot-pace or Chimney-hearth of Marble, containing 7 foot in length, and 21 inches in breadth, how many foot of Marble is there in that Foot-pace or Hearth?*

Look for 21 inches in the first Column of the Table, and right against it, in that Column which hath 7 at the head thereof, you shall find 12 25, that is 12 foot, and 25 hundred parts of a foot, which is just a quarter; so there is 12 foot and a quarter of Marble in that Hearth or Foot-pace.

Example 5. *A Kitchen is Paved with Free-stone, which is 18 foot broad, and 19 foot long, how many foot is there in that Kitchen?*

In regard that 18 foot (the breadth of the Kitchen) cannot be found in the first Column of the Table, that going but to 36 inches, or 3 foot, find therefore what the Kitchen would contain if it were only 3 foot, or 36 inches broad, and

19 foot long; find 36 in the first Column, and 19 foot at the head, and against 36, and under 19, you shall find 57, 00, which shews, that if the Kitchen had been but 3 foot broad, and 19 foot long, it would have contained 57 foot just; but being it is 18 foot broad, which is 6 times 3 foot, it must therefore needs contain 6 times 57 foot, that is 342 foot; which you may find by setting down 57 six times, and adding them together, if you cannot multiply: Or you may find how much 6 times 57 is, by the foregoing large *Table of Multiplication* in the first part of this Book. And thus must you do, when the breadth given, is larger than this Table doth afford; as by taking the half, the quarter, the fifth, the sixth, the seventh, eighth, or tenth part thereof. Or by taking it out of the Table at two or three times, as in the Example following.

Example 6. There is a Banquetting house in a Garden 7 foot long, and 5 foot broad, paved with Marble, how many foot of Paving is there in this Banquetting Room?

Because 5 foot, the breadth, exceedeth the number in the Table, take half thereof, which is 2 foot and a half, or 30 inches; then find 30 inches in the first Column of the Table, and right against it, under 7 foot, you shall find 17, 50, that is 17 foot and an half. Now, because 30 inches, or two foot and half, was but half the breadth given, therefore 17 foot and a half,

half, is but half the number of feet in the Pavement; therefore double 17 foot and a half, and it makes 35 foot, and so many foot of Paving is there in the Banketting house.

Or, If you would not go by taking of the half, (which, if it may be had, is the easiest way) you may divide the breadth into any two parts, as into 3 foot, and 2 foot; then look what it would contain if it were 3 foot, or 36 inches broad, and 7 foot long, and you shall find it would contain 21 foot. Also look what it would contain if it had been 2 foot, or 24 inches broad, and 7 foot Long, and you shall find it would contain 14 foot; these two numbers, 21 foot, and 14 foot, added together, will make 35 foot, for the content, or number of feet, as before.

A TABLE, Shewing how much in Length of any squared Stone or Timber, doth make a foot Solid, the Square at the end of the Piece being known.

The Square of the end of the Stone or Timber in Feet and Inches.	F.	In.	F.	In.	Pts.	The Length of a Foot Solid in Feet, Inches, and parts of Inches.
	Q.					
	6	4	0	0	0	
	7	2	11	2	0	
	8	1	3	0	0	
	9	1	9	3	0	
	10	1	3	3	0	
	11	1	2	3	0	
I.	0	1	0	0	0	
	1	0	10	2	0	
	2	0	8	8	0	
	3	0	7	6	0	
	4	0	6	7	0	
	5	0	5	9	0	
	6	0	5	3	0	
	7	0	4	8	0	
	8	0	4	3	0	
	9	0	3	9	0	
	10	0	3	5	0	
	11	0	2	3	0	
II.	0	0	3	0	0	
	1	0	2	8	0	
	2	0	2	6	0	
	3	0	2	3	0	
	4	0	2	1	0	
	5	0	1	9	0	
	6	0	1	8	0	
	7	0	1	7	0	
	8	0	1	6	0	
	9	0	1	5	0	
	10	0	1	4	0	
	11	0	1	3	0	
III.	0	0	1	2	0	

An Explanation of this Table.

THE Table consisteth of two Columns; the first containeth the Number of Feet and Inches contained in the side of the Square, at the end of any squared Timber Tree, or squared Stone. And the other Column shews, (if a Piece of Timber or Stone be so many Inches square at the end) how many Feet, Inches, and parts of an Inch, must go to make a Solid or Cubical Foot thereof, containing 1728 Inches.

The

The Use of the Table by Examples.

Example 1. *If the side of the Square of any Stone or Piece of Timber be 8 inches, how much of that Timber or Stone in length, will make a foot Solid.*

Look in the first Column of the Table for 8 inches, against which, in the second Column, you shall find 2, 3, 0, which is 2 foot and 3 inches, and so much in length must there be to make one Solid foot; and so many times as 2 foot 3 inches, is contained in the length of the Tree, so many foot is there in the Tree; and if there be any odd measure at the end of the Piece, the length of the foot being 27 inches, 13 inches and an half, is half a foot; 8 inches and 3 quarters, is a quarter of a foot; and nearer you need not go in such grosse works.

Example 2. *If the side of the Square, at the end of any squared Timber tree, be 11. foot and 2 inches, how much of that Timber or Stone in length, will make a foot Solid?*

Find 11. foot 2 inches in the first Column of the Table, and right against it, in the second Column, you shall find 0, 2, 6, which is, no feet, 2 inches, and 6 tenth parts of an inch (which is somewhat above half an inch) so that 3 inches, and a small quantity above half an inch in length, will make a foot of that squared Stone or Timber.



Place this next after Page 160.

[L]



A
TABLE,

OF

Cubical (or Solid) Measure;

AS

TIMBER, STONE, &c.

Ready Cast up.

From half an Inch to 36 Inches Square
at the end;

AND

From one Foot to 10 Foot in Length.

AND

Consequently (by help of Addition only)
to any greater Length.



The length of the Timber,

Inch.	1		2		3		4		5	
	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.
-	0	00	0	00	0	00	0	01	0	01
1	0	01	0	01	0	01	0	03	0	03
-	0	01	0	03	0	05	0	06	0	08
2	0	03	0	05	0	08	0	11	0	14
-	0	04	0	08	0	13	0	17	0	21
3	0	06	0	11	0	18	0	25	0	31
-	0	08	0	17	0	25	0	34	0	42
4	0	11	0	22	0	33	0	44	0	55
-	0	14	0	28	0	42	0	56	0	70
5	0	17	0	25	0	52	0	69	0	87
-	0	21	0	42	0	63	0	84	1	05
6	0	25	0	50	0	75	1	00	1	25
-	0	29	0	58	0	88	1	17	1	46
7	0	34	0	68	1	01	1	36	1	70
-	0	39	0	78	1	17	1	56	1	95
8	0	44	0	89	1	33	1	77	2	22
-	0	50	1	00	1	50	2	01	2	51
9	0	56	1	12	1	68	2	25	2	81
-	0	63	1	25	1	88	2	51	3	13
10	0	69	1	39	2	08	2	77	3	47
-	0	76	1	53	2	29	3	06	3	82
11	0	84	1	68	2	52	3	36	4	20
-	0	92	1	84	2	76	3	67	4	59
12	1	00	2	00	3	00	4	00	5	00
-	1	08	2	17	3	25	4	34	5	42
13	1	17	2	35	3	52	4	69	5	87
-	1	26	2	53	3	80	5	06	6	33
14	1	36	2	72	4	08	5	44	6	80
-	1	46	2	92	4	38	5	84	7	30
15	1	56	3	12	4	68	6	25	7	81
-	1	67	3	33	5	00	6	67	8	34
16	1	78	3	55	5	33	7	11	8	89
-	1	89	3	78	5	67	7	56	9	45
17	2	01	4	01	6	01	8	03	10	03
-	2	13	4	25	6	28	8	51	10	63
18	2	25	4					00	12	25

Square of the Timber or Stone in Inches and half Inches.



or Stone in Feet.

Square of the Timber or Stone in Inches and half Inches.

Inch.	6		7		8		9		10	
	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.
-	0	01	0	01	0	01	0	01	0	01
1	0	04	0	05	0	05	0	06	0	07
-	0	09	0	11	0	13	0	11	0	16
2	0	17	0	19	0	21	0	25	0	28
-	0	26	0	30	0	34	0	39	0	43
3	0	37	0	43	0	49	0	56	0	61
-	0	51	0	59	0	68	0	76	0	85
4	0	66	0	78	0	89	0	99	1	11
-	0	84	0	98	1	12	1	26	1	40
5	1	04	1	22	1	39	1	56	1	74
-	1	26	1	47	1	68	1	89	2	10
6	1	50	1	55	2	00	2	25	2	50
-	1	76	2	05	2	34	2	64	2	93
7	2	04	2	38	2	72	3	06	3	40
-	2	34	2	73	3	12	3	51	3	90
8	2	66	3	11	3	55	3	99	4	44
-	3	01	3	51	4	01	4	52	5	02
9	3	37	3	93	4	49	5	06	5	61
-	3	76	4	29	5	01	5	64	6	27
10	4	16	4	86	5	55	6	24	6	94
-	4	59	5	35	6	12	6	88	7	65
11	5	04	5	88	6	72	7	56	8	40
-	5	51	6	43	7	35	8	27	9	19
12	6	00	7	00	8	00	9	00	10	00
-	6	51	7	51	8	68	9	76	10	85
13	7	04	8	22	9	39	10	56	11	74
-	7	59	8	86	10	13	11	39	12	66
14	8	16	9	53	10	89	12	25	13	61
-	8	76	10	22	11	68	13	14	14	60
15	9	37	10	93	12	49	14	06	15	62
-	10	01	11	67	13	34	15	01	16	68
16	10	67	12	44	14	32	16	00	17	78
-	11	34	13	24	15	13	17	02	18	91
17	12	04	14	05	16	05	18	06	20	07
-	12	76	14	89	17	0	19	14	21	27
18	13	50	15	75	19	00	20	25	22	50

The length of the Timber,

inch.	1		2		3		4		5	
	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.
19	2	38	4	75	7	13	9	51	11	88
20	2	51	5	07	7	52	10	03	12	53
21	2	64	5	28	7	82	10	56	13	20
22	2	78	5	55	8	33	11	11	13	89
23	2	92	5	83	8	75	11	67	14	59
24	3	06	6	11	9	18	12	25	15	31
25	3	21	6	41	9	63	12	84	16	05
26	3	36	6	72	0	08	13	44	16	80
27	3	51	7	03	10	55	14	06	17	58
28	3	67	7	34	1	01	14	69	18	36
29	3	83	7	67	11	50	15	34	19	17
30	4	08	8	00	12	00	16	00	20	00
31	4	16	8	33	12	50	16	66	20	83
32	4	34	8	68	3	02	17	36	21	70
33	4	51	9	02	13	54	18	05	22	56
34	4	69	9	39	14	08	18	77	23	47
35	4	88	2	75	14	63	19	51	24	38
36	5	06	10	11	15	19	20	15	25	31
37	5	25	10	50	15	75	21	00	26	25
38	5	44	10	89	16	33	21	78	27	22
39	5	67	11	34	17	01	22	68	28	35
40	5	84	11	68	17	52	23	30	29	20
41	6	04	12	06	18	13	24	17	30	21
42	6	25	12	50	18	75	25	00	31	25
43	6	46	12	92	19	38	25	84	32	30
44	6	67	13	34	20	02	26	69	33	36
45	6	89	13	78	20	67	27	56	34	41
46	7	11	14	22	21	33	28	44	35	55
47	7	33	14	66	21	92	29	33	36	66
48	7	56	15	12	22	68	30	24	37	81
49	7	78	15	56	23	34	31	12	38	90
50	8	03	6	05	24	08	32	11	40	14
51	8	26	16	52	24	79	33	05	41	31
52	8	51	17	01	25	52	34	03	42	53
53	8	73	17	50	26	25	35	00	43	75
54	9	00	18	00	27	00	35	00	49	00

Square of the Timber or Stone in Inches and half Inches.

or Stone in Feet.

Inch.	6		7		8		9		10	
	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.	F.	Pt.
-	14	26	16	64	19	01	21	39	23	77
19	15	04	17	55	10	05	12	56	15	07
-	15	64	18	49	11	13	33	77	16	41
20	16	67	19	4	21	21	25	0	27	78
-	17	51	20	42	23	34	26	16	19	18
21	18	37	21	43	24	49	27	56	30	62
-	19	26	22	47	25	68	28	89	32	10
22	20	16	23	53	26	89	30	25	33	61
-	21	09	24	61	28	13	31	6	35	16
23	22	04	25	71	29	38	33	06	36	73
-	23	01	26	84	30	63	34	51	38	35
24	24	00	28	00	32	00	56	00	40	00
-	24	92	29	16	33	33	27	49	41	66
25	26	04	30	38	34	72	39	06	43	40
-	27	08	31	59	36	10	40	61	45	13
26	28	16	32	86	37	55	42	24	46	94
-	29	26	34	14	39	01	43	89	48	77
27	30	38	35	44	40	50	45	57	50	63
-	31	50	36	75	42	00	47	25	52	50
28	32	67	38	11	43	56	49	00	54	45
-	34	02	39	69	45	36	51	03	56	70
29	35	04	40	88	46	72	52	56	58	40
-	36	26	42	30	48	34	54	39	60	43
30	37	50	43	75	50	00	56	25	62	50
-	38	76	45	22	51	68	58	14	64	60
31	40	04	46	71	53	38	60	06	66	73
-	41	34	48	23	55	12	62	01	68	90
32	42	66	49	78	56	89	63	99	71	11
-	43	99	51	33	58	66	65	99	73	33
33	45	37	52	93	60	49	68	06	75	62
-	46	68	54	46	62	24	70	02	78	80
34	48	17	56	19	64	22	72	25	80	28
-	49	58	57	84	66	10	74	37	82	63
35	51	04	59	55	68	05	76	56	85	07
-	52	50	61	25	70	00	78	75	87	50
36	54	00	63	00	72	00	81	00	90	00

Square of the Timber or Stone in Inches and half Inches.

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An Explanation of this Table.

THis Table consisteth of 11 Columns; In the first whereof, that towards the left hand, having the word Inches at the top or head thereof, beginneth with a [.] representing half an inch, then the figure 1, representing one Inch, then [.] representing 1 Inch and a half, and so downwards, by half Inches, to 18 Inches, shewing the side of the Square of any squared Timber or Stone. And in the other 10 Columns, having the figures, 1. 2. 3. 4. &c. to 10. at the tops or heads of them, they represent the length of any Timber Tree in Feet; so that if you find the length of the side of the Square in Inches, and half Inches, in the first Column, and the length of the Tree in Feet, at the head of the Table, in the Square or meeting of these two numbers, you have the content or quantity of Feet contained in that Stone or Timber. The Table begins at half an Inch, and so continues by half Inches, to 36 Inches the side of the Square; and from one Foot, to 10 Foot in length.

The Use of this Table by Examples.

Example 1. If the side of the Square at the end of any Timber or Stone be 15 Inches, and the length thereof 5 Foot, how many Feet is there in that Stone or Timber Log?

Find 15 Inches in the first Column of the Table,
M

ble, and right against it, under 5 Foot the length, you shall find 7. 81. which is 7 Foot, and 81 hundred parts of a Foot; that is, something above three quarters of a Foot; for 25 parts, is a quarter of a Foot; 50 parts, half a Foot; and 75 parts, three quarters of a Foot. So that in this Stone or Timber, there is 7 foot, and above three quarters.

Example 2. *If the Square of a Timber Tree be 17 Inches and an half, and the length thereof be 9 Foot, how many Feet are contained in that Tree?*

Look for 17 Inches and an half in the first Column, against which, (in the Column of 9 Foot) you have 19. 14. that is, 19 Foot, and 14 hundred parts of a Foot, which is about half a quarter of a Foot.

Example 3. *If a Piece of Timber or Stone be 30 Inches square, and 10 Foot long, how many Feet is there in that Piece?*

Find 30 Inches the breadth, in the first Column, and against it, under 10 Foot the length, you shall find 62. 50. that is, 62 Foot, and 50 hundred parts of a Foot, which is half a Foot, so that that Piece contain,

Example 4. *If the Square of a Timber Tree be 27 Inches, and the length thereof 18 Feet, how many solid Feet is there in that Tree?*

Because the Table goeth but to 10 Foot in length,

length, and this Tree is 18 Foot long; therefore (as you did before in Board measure) take half the length thereof, which is 9 Foot; then finding 27 Inches, the square, in the first Column, and right against it, under 9 Foot, you shall find 45 Foot, 57 parts; and so many Feet would the Tree have contained, if it had been but 9 Foot long; but being 18 Foot long, it must contain as much more, that is, 91 Foot, and 14 parts, which is half a quarter of a Foot.

45—57
45—57
—
91—14

And thus if the Tree be very long, as 30, 40, or 50 Foot, you may take so many times ten Foot, as there are tens in its length, and the odd feet by themselves, and add all together. So a Timber Tree being 31 Inches square, and 47 Foot long, will be found by this Table to contain 303 Foot, 62 parts, that is, half a quarter above half a Foot.

		F. pr.	
At 31 Inches Square, and	{ 10 Foot long }	{ 64	60
	{ 10 more }	{ 64	60
	{ 10 more }	{ 64	60
	{ 10 more }	{ 64	60
	{ 7 more }	{ 45	22
47		303 62	

Cautiō I.

IN the Examples beforegoing, we have supposed the Tree or Stone we measured, to carry the same square from end to end throughout the Piece; but we see, that in all, or most Trees,

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(especially

(especially if they be very long) there is a great deal of difference between the squares of either end of the Tree : Wherefore, Workmen, and other Measurers, do (for the most part) make choice of some convenient place in the middle of the Tree, and take the square there for the true square ; but this is not true (except by chance) therefore in such Timber Trees, Measure the squares at both the ends, and add the sides of those two squares together, and half that length shall be the true square which the Tree will carry throughout. Thus, If a Timber Tree have the side of the square at the great end 32 Inches, and at the lesser end 23 Inches, these two added together, will make 55 Inches, the half whereof is 27 Inches and a half ; and that is the true side of the square. With which, and the length (by the Table) you may find the content as is before taught.

Caution II.

Hitherto we have dealt with such Timber or Stone, as have all the 4 sides at the end thereof equal ; but it is often seen, that the sides of the square, at the ends of squared Timber and Stone, are unequal, as sometimes 3, 4, 5, 6, 10, or 15 Inches difference ; wherefore some Artificers and other Measurers, do add the two sides together, and take the half of that for the side of the true square ; but this is egregiously false ; and although the error be not much, when the difference of the sides is little, yet if the difference of the sides be great, the error

error is intollerable; as I will make appear by Example.

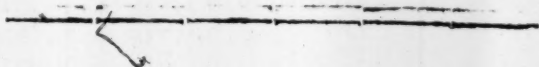
Let one side be 30 Inches, and the other 183 Inches, these two added together, make 213, the half whereof is 106 and a half, which they take for the side of a true square; whereas the true square is 74 Inches, and 1 tenth of an Inch, the error here being 32 Inches, and 4 tenths.

To remedy which, and to prescribe a ready way for the finding of the true side of a square, equal to any unequal sided Timber or Stone, I have here inserted a Table whereby you may effect your desire with ease and exactness.



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A T A B L E,

By which you may find the true Square of any unequal sided Stone or Timber.

In.	In.	In.	In.
1 000000	26 141497	51 170757	76 188081
2 030103	27 143136	52 171600	77 188649
3 047712	28 144715	53 172427	78 189209
4 062206	29 146239	54 173239	79 189762
5 069897	30 147712	55 174036	80 190309
6 077815	31 149136	56 174818	81 190848
7 084509	32 150525	57 175587	82 191381
8 090308	33 151851	58 176342	83 191907
9 095424	34 153147	59 177085	84 192428
10 100000	35 154406	60 177815	85 192941
11 104139	36 155630	61 178532	86 193449
12 107918	37 156820	62 179239	87 193952
13 111394	38 157978	63 179934	88 194448
14 114612	39 159106	64 180618	89 194939
15 117609	40 160205	65 181291	90 195624
16 120411	41 161278	66 181954	91 195904
17 123044	42 162325	67 182607	92 196378
18 125527	43 163346	68 183250	93 196848
19 127875	44 164345	69 183885	94 197312
20 130102	45 165321	70 184509	95 197772
21 132221	46 166275	71 185125	96 198217
22 134242	47 167209	72 185735	97 198677
23 136172	48 168124	73 186332	98 199123
24 138021	49 169019	74 186923	99 129563
25 139794	50 169897	75 187506	100 200000

An Explanation of the Table.

THE Table beginneth at 1 Inch Square, and so on by 2, 3, 4, 5, &c. to 100 Inches Square; against each of which numbers of Inches, are set other numbers appropriate to the business in hand.

The Use of the Table by Examples.

Example 1. *If one side of a Square Stone, or Piece of Timber, be 16 Inches, and the other 25 Inches, what is the side of a Square equal thereto?*

First find 16 Inches in the Table, against which you shall find this number, 120411. Also find 25 Inches in the Table, and against it you shall find this number 139794. These two numbers added together, produce this number 260205, the half whereof is 130102. Now look in the Table for this number, (or the nearest you can find to it) and you shall find it to stand against 20 Inches, so 20 inches is the true Square of such an unequal sided Piece of Stone or Timber.

Example 2. Let the unequal sides be 88 Inches, and 45 Inches.

Look for 88 Inches in the Table, the number
M 4 answering

M 4

answering thereto is 194448. Also find 45 Inches, and the number standing against that is 165321, these two added together make 359769, the half whereof is 179884, which seek in the Table, (or the nearest to it) and the nearest number to it is 179934, against which stands 63 Inches, which is the near side of a Square equal to that unequal sided Piece of Timber or Stone.

$$\begin{array}{r}
 88 \text{ Inches} \text{ --- } 194448 \\
 45 \text{ Inches} \text{ --- } 165321 \\
 \hline
 \text{Their Sum} \text{ --- } 359769 \\
 \text{The half Sum} \text{ --- } 179884
 \end{array}$$

Having thus found the side of a Square equal to any unequal sided Timber or Stone, you may (by the former Tables) find either how much in length will make a Foot, or how many Foot is contained in any such Stone or Timber tree, according to the former directions.

Of Round Timbers.

Concerning the Mensuration of *Squared Timber or Stone*, whether of equal or unequal sides, I have already largely insisted upon; I will now shew how *Round Timber* is to be measured.

Artificers, and all Buyers of *Rough Timber*, do generally Girt the Tree about with a String, at about 4 or 5 Foot from the greater end thereof; of which String, they take one quarter of the

the length thereof for the true Square of the Tree, which is most intollerable false, for by their so doing, they make every Tree they so measure, above a fifth part less than in reality it is. But Custom herein hath so gotten the upper hand of truth, that you shall not meet with one man of a hundred, that will buy *Rough Timber* by any other measure; and for their so doing, they use this Argument. *When the Bark is taken off, and the Tree hewed to a Square, it will then hold out no more measure, that which is cut off being fit for nothing but the fire, and the charge of Squaring, is of more worth by far than the Chips.*

It being so, that they will buy by no other kind of Measure, you may then measure Round Timber by the either of the foregoing Tables of Timber Measure.

Example 1. If a Tree be 68 Inches about, how much thereof in length will make a foot Square?

A fourth Part of 68 Inches, is 15 Inches, and this they take for the true Square; wherefore, look for 15 Inches, or 1 Foot 3 Inches, in the first Column of the first Table of Timber Measure, and right against it in the second Column, you shall find that 7 Inches, and 6 tenth parts of an Inch, which is somewhat above half an Inch, will make a Foot Square. Again,

Example 2. If a Tree be 136 Inches about, and 9 Foot long, how many Solid Foot is there in that Tree?

The

The fourth part of 136, is 34 Inches, wherefore find 34 Inches in the first Column of the Second Table of Timber Measure, and 9 Foot in the head thereof, and right against 34 Inches, and under 9 Foot, you shall find 72. 25. that is, 72 Foot and a quarter; and for so much will they buy it, and for no more, which is less than the true Content of the Tree, by above a fifth part.

But although they have this pretence for *Round Timber Rough*, they cannot have the same for Stone, or Round Columns of Wood or Stone, wherein there is no such wast as they there speak of; I have therefore here added a Table, which shews *How much in length, of any Round Timber or Stone, whose Girt or Circumference is known, will make a Foot Solid.* By which Table you shall see the Error of the former customary Rule clearly detected.

A T A B L E,

Shewing how much in Length of any Round
Timber Tree, whose Circumference (or
Girt) is known, doth make a Foot Solid.

Circ.	F.	In.	pt.	Circ.	F.	In.	pt.	Circ.	F.	In.	pt.
10	18	11	2	40	1	1	6	70	0	4	4
11	14	11	5	41	1	0	9	71	0	4	3
12	12	6	8	42	1	0	3	72	0	4	3
13	10	8	5	43	0	11	7	73	0	4	1
14	9	2	7	44	0	11	1	74	0	3	9
15	7	10	3	45	0	10	7	75	0	3	8
16	7	0	8	46	0	10	2	76	0	3	7
17	6	3	0	47	0	9	9	77	0	3	7
18	5	7	0	48	0	9	4	78	0	3	6
19	5	0	2	49	0	9	0	79	0	3	5
20	4	6	3	50	0	8	7	80	0	3	4
21	4	1	2	51	0	8	3	81	0	3	3
22	3	8	9	52	0	8	0	82	0	3	2
23	3	4	9	53	0	7	8	83	0	3	2
24	3	1	7	54	0	7	4	84	0	3	1
25	2	10	7	55	0	7	2	85	0	3	0
26	2	8	1	56	0	6	9	86	0	2	9
27	2	5	8	57	0	6	7	87	0	2	9
28	2	3	7	58	0	6	4	88	0	2	8
29	2	1	8	59	0	6	2	89	0	2	7
30	2	0	1	60	0	6	0	90	0	2	7
31	1	10	6	61	0	5	8	91	0	2	6
32	1	9	2	62	0	5	6	92	0	2	6
33	1	7	9	63	0	5	5	93	0	2	5
34	1	6	8	64	0	5	2	94	0	2	5
35	1	5	7	65	0	5	1	95	0	2	4
36	1	4	7	66	0	4	9	96	0	2	4
37	1	3	8	67	0	4	8	97	0	2	3
38	1	3	0	68	0	4	7	98	0	2	3
39	1	2	3	69	0	4	6	99	0	2	2
								100	0	2	2

The Circumference of the Tree in Inches.

The Circumference of the Tree in Inches.

The Circumference of the Tree in Inches.

An Explanation of this Table.

THis Table consisteth of two Columns, the first Column contains the number of Inches that any Timber Tree or Stone Column, is in the Girt about, or Circumference, beginning at 10 Inches, and so proceeding by 11, 12, 13, &c. to 100 Inches about. And in the second Column, against every one of these numbers of Inches in Circumference, you have the number of Feet, Inches, and parts of an Inch, that will make a Foot Solid.

The Use of the Table by Example.

Example. If a Tree be 60 Inches about, how much thereof in length, will make a Foot Solid?

Find 60 Inches in the first Column of the Table, and against it, in the second Column, you shall find 0. 6. 0. that is, no Feet, 6 Inches, and no parts; so that just 6 Inches in length, will make a Foot Solid. Whereas, by the other way, you found that there must be 7 Inches, and above half an Inch, to make a Foot Solid, which is above an Inch and a half too much in each Foots length; an Error intollerable.

A
TABLE,

Shewing what Number of

S Q U A R E S

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Tyling, Flooring, or of any other

Work measured by the Square of 10

Foot, is contained in any such

Piece of Work; The length

and breadth thereof be-

ing given in Feet;

Ready cast up.

From 10 Foot to 40 Foot long,

AND

From 10 to 20 Foot broad.

And consequently (by Addition only) to any
Greater Length or Breadth.

The breadth of the Flooring or
Tying, &c. in Feet.

Feet	10		11		12		13		14	
	Sq.	F.	Sq.	F.	Sq.	F.	Sq.	F.	Sq.	F.
10	1	00	1	10	1	20	1	30	1	40
11	1	10	1	21	1	32	1	43	1	54
12	1	20	1	32	1	44	1	56	1	68
13	1	30	1	43	1	56	1	69	1	82
14	1	40	1	54	1	68	1	82	1	96
15	1	50	1	65	1	80	1	95	2	10
16	1	60	1	76	1	92	2	08	2	24
17	1	70	1	87	2	04	2	21	2	38
18	1	80	1	98	2	16	2	34	2	52
19	1	90	2	09	2	28	2	47	2	66
20	2	00	2	20	2	40	2	60	2	80
21	2	10	2	31	2	52	2	73	2	94
22	2	20	2	42	2	64	2	86	3	08
23	2	30	2	53	2	76	2	99	3	22
24	2	40	2	64	2	88	3	12	3	36
25	2	50	2	75	3	00	3	25	3	50
26	2	60	2	86	3	12	3	38	3	64
27	2	70	2	97	3	24	3	51	3	78
28	2	80	3	08	3	36	3	64	3	92
29	2	90	3	19	3	48	3	77	4	06
30	3	00	3	30	3	60	3	90	4	20
31	3	10	3	41	3	72	4	03	4	34
32	3	20	3	52	3	84	4	16	4	48
33	3	30	3	63	3	96	4	29	4	62
34	3	40	3	74	4	08	4	42	4	76
35	3	50	3	85	4	20	4	55	4	90
36	3	60	3	96	4	32	4	68	5	04
37	3	70	4	07	4	44	4	81	5	18
38	3	80	4	18	4	56	4	94	5	32
39	3	90	4	29	4	68	5	07	5	46
40	4	00	4	40	4	80	5	20	5	60

The length of the Flooring, Tying, &c. in Feet.

The breadth of the Flooring or
Tiling, &c. in Feet.

F.	15		16		17		18		19		20	
	Sq.	F.	Sq.	F.	Sq.	F.	Sq.	F.	Sq.	F.	Sq.	F.
10	1	50	1	60	1	70	1	80	1	90	1	00
11	1	55	1	66	1	77	1	88	1	99	1	10
12	1	60	1	72	2	84	2	96	2	108	2	20
13	1	65	2	78	2	91	2	104	2	117	2	30
14	2	70	2	84	2	98	2	112	2	126	2	40
15	2	75	2	90	3	105	3	120	3	135	3	50
16	2	80	3	96	3	112	3	128	3	144	3	60
17	2	85	3	102	3	119	3	136	3	153	3	70
18	2	90	3	108	4	124	4	144	4	164	4	80
19	3	95	4	114	4	131	4	152	4	176	4	90
20	3	100	4	120	4	138	4	160	4	184	4	00
21	3	105	4	126	5	145	5	170	5	195	5	10
22	3	110	5	132	5	152	5	180	5	210	5	20
23	3	115	5	138	5	159	5	188	5	220	5	30
24	3	120	5	144	6	166	6	196	6	231	6	40
25	3	125	6	150	6	174	6	204	6	242	6	50
26	3	130	6	156	6	181	6	212	6	253	6	60
27	4	135	6	162	7	188	7	220	7	264	7	70
28	4	140	7	168	7	195	7	228	7	275	7	80
29	4	145	7	174	7	202	7	236	7	286	7	90
30	4	150	7	180	8	210	8	244	8	297	8	00
31	4	155	8	186	8	218	8	252	8	308	8	10
32	4	160	8	192	8	225	8	260	8	319	8	20
33	4	165	8	198	9	232	9	268	9	330	9	30
34	4	170	9	204	9	240	9	276	9	341	9	40
35	5	175	9	210	9	247	9	284	9	352	9	50
36	5	180	10	216	10	254	10	292	10	363	10	60
37	5	185	10	222	10	262	10	300	10	374	10	70
38	5	190	10	228	11	269	11	308	11	385	11	80
39	5	195	11	234	11	276	11	316	11	396	11	90
40	5	200	11	240	12	284	12	324	12	407	12	00

The length of the Flooring, Tiling, &c. in Feet.

Carpenters do measure their Timber Frames of any Building (when Erected) which some call (and not improperly) the *Carcass of a Building*, by the Square of 10 Foot. And the Partitions, and the Timber Flooring, they also reckon by this Measure, as also the Boarding of Floors. Bricklayers also do measure their Tyling of Houses, and Flooring of Rooms with Square Tyles by this Measure: A Square contains 100 Square Feet. And for the ready computing of the quantity of any such work, I have calculated the foregoing Table, by which, measuring the length and Breadth of any such Work, by a two Foot Rule, you may immediately find the quantity of Squares therein contained.

An Explanation of the Table.

The Table consisteth of 11 Columns, the first whereof, towards the left hand, beginneth with 10 Foot, and so downwards, by 11, 12, 13, &c. to 40 Foot, which is to be accounted as the *Length* of any Tyling, Flooring, Partitioning, or Carcass of any Building. The other Ten Columns, having at the head of each of them, 10, 11, 12, &c. to 20, are the number of Feet that the *Carcass*, Partitioning, Flooring, or Tyling, is in *Breadth*. So that if you find the *Length* of any such Work in Feet in the first Column of the Table, and the *Breadth* thereof in Feet, at the head of the Table, in the common angle, or meeting of these two numbers, you have the number

number of Squares and Feet contained in any such piece of Work.

The Use of this Table by Examples.

Example 1. *A Carpenter hath Erected the Carcass of a House which is 33 Foot high; which House being Bevell, all the four sides thereof are unequal in breadth, viz. one side is 11 Foot, another 15 Foot, the third 13 Foot, and the fourth 14 foot Broad, how many Square is there in this Carcass?*

For the first side, which is 11 Foot broad, find 11 Foot at the top of the Table, and look down that Column till you come against 33 Foot (the height) in the first Column, and there you shall find 3 Square, 63 Foot.

Secondly, For the side 15 Foot broad, look 15 at the top, and against 33 in the side, you shall find 4 Square, 95 Foot.

Thirdly, For the side 13 Foot broad, look 13 at the top, and against 33 on the side of the Table, you shall find 4 Square 29 Foot. And

Fourthly, For the fourth side which is 14 Foot broad, find 14 at the top of the Table, and against 33 on the side, you shall find 4 Square, 62 Foot. These 4 numbers being added together, as in the Margine, do make in all 17 Square, and 39 Foot, which is a quarter of a Square, and 14 Foot over, that is something

N

above

above half a quarter of a Square. So that there is contained in this Carcass, 17 Square, one quarter, and half quarter, and one Foot and a half; but you need not come to these nice parts: It will be sufficient that you come to Squares, and Quarters, which in the Table are visible.

And in the same manner as you measured the several sides, in the same manner may you measure the Partitioning and Flooring.

Example 2. If a Floor be 18 foot in breadth, and 27 foot in length, how many Square of flooring is there in that Room?

Find 18, the breadth of the Floor, at the head of the Table, and under it, against 27 foot (the length) in the first Column, you shall find 4 Square, 86 foot; that is 4 Square, three quarters, and 11 foot. And so much is contained therein.

Example 3. If a Room be 36 foot long, and 34 foot broad, how many Square of Flooring is there in that Room?

Because you cannot find 34, the breadth at the top of the Table, (it going but to 20 foot broad) take the half thereof, that is 17 foot. Then find 17 foot, (the half breadth) at the top of the Table, and under it, against 36 (the length) in the first Column, you shall find 6 Square, 12 foot. Now because 17 foot was but half the breadth, therefore 6 Square, 12 foot, is but half the Content; wherefore double
6 Square,

6 Square, 12 foot, and it makes 12 Square, 24 foot, that is 12 Square and a quarter, wanting only one foot; and so much Flooring is there in that Room which is 34 foot broad, and 36 foot long.

Example 4. If a Hall be 76 foot long, and 38 foot broad, how many Square of Flooring is there in such a Room?

Here both the length and breadth are too large for the Table, therefore take the half of either of them; so half the length is 38 foot, and half the breadth is 19 foot. Then look 38 foot (the half length) in the first Column, and right against it, under 19 (the half breadth) you shall find 7 Square 22 foot.

Now, because you took but the half, both of the length and of the breadth also, this 7 Square, 22 foot, is but one quarter of the Flooring; wherefore set it down 4 times (or multiply it by 4) and add them together, the Sum will be 28 Square, 88 foot. That is 28 Square, three quarters, and 13 foot, which is half a quarter.

7	22
7	22
7	22
7	22
<hr/>	
28	88

And here note, that whatsoever is here said concerning *Flooring*, the like is to be done for *Tyling*, or any other Artificers Work that is measured by the Square of 10 foot.





A

TABLE,

Shewing how many

SQUARE YARDS

Are Contained in any Piece of

Plaisterers, Joyners, Painters,
or Paviers **W**ork;

(Or in any other Artificers, who
measure their Work by the Yard
Square ;) The Length and Breadth
thereof being given in Feet.



The length of any Plastering or
other Work in Feet.

F.	1		2		3		4		5		6		7	
	Y.	F.	Y.	F.	Y.	F.	Y.	F.	Y.	F.	Y.	F.	Y.	F.
1	0	10	2	0	3	0	4	0	5	0	6	0	7	0
2	0	20	4	0	6	0	8	1	1	1	3	1	5	1
3	0	30	6	1	8	1	3	1	6	2	0	2	3	1
4	0	40	8	1	1	1	7	2	2	2	6	3	1	1
5	0	51	1	1	0	2	2	2	7	3	3	3	8	1
6	0	61	3	2	0	2	6	3	3	4	6	4	6	1
7	0	71	5	2	3	3	1	3	8	4	6	5	4	1
8	0	81	7	2	6	3	5	4	4	5	3	6	2	1
9	1	02	9	3	0	4	0	5	0	6	7	0	0	1
10	1	12	2	3	3	4	4	5	5	6	6	7	7	1
11	1	22	4	3	6	4	8	6	1	7	3	8	5	1
12	1	32	6	4	0	5	3	6	4	8	0	9	3	1
13	1	42	8	4	3	5	7	7	2	8	6	10	1	1
14	1	53	1	4	6	6	2	7	7	9	3	10	8	1
15	1	63	3	5	0	6	6	8	3	10	6	11	6	1
16	1	73	5	5	3	7	1	8	8	10	6	12	4	1
17	1	83	7	5	6	7	5	9	4	11	3	13	2	1
18	2	04	0	6	0	8	0	10	0	12	0	14	0	1
19	2	14	2	6	3	8	4	10	5	12	6	14	7	1
20	2	24	4	6	6	8	8	11	1	13	3	15	5	1
21	2	34	6	7	0	9	3	11	6	14	0	16	3	1
22	2	44	8	7	3	9	7	12	2	14	6	17	1	1
23	2	55	1	7	6	10	2	12	7	15	3	17	8	1
24	2	65	3	8	0	10	6	13	2	16	0	18	6	1
25	2	75	5	8	3	11	1	13	8	16	6	19	4	1
26	2	85	7	8	6	11	5	14	4	17	3	20	2	1
27	3	06	0	9	0	12	0	15	0	18	0	21	0	1
28	3	16	2	9	3	12	4	15	5	18	6	21	7	1
29	3	26	4	9	6	13	8	16	1	19	3	22	5	1
30	3	36	6	10	0	13	2	16	6	20	0	23	3	1

The breadth of any Plastering or other Work in Feet.

The length of any Plaistering or
other Work in Feet.

F.	8		9		10		11		12		13		14		15	
	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.
1	0	8	1	0	1	1	1	2	1	3	1	4	1	5	1	6
2	1	7	2	0	2	2	2	4	2	6	2	8	3	1	3	3
3	2	6	3	0	3	3	3	6	4	0	4	3	4	6	5	0
4	3	5	4	0	4	4	4	8	5	3	5	7	6	2	6	6
5	4	4	5	0	5	5	6	1	6	6	7	2	7	7	8	3
6	5	3	6	0	6	6	7	3	8	0	8	6	9	3	10	0
7	6	2	7	0	7	7	8	5	9	3	10	1	10	8	11	6
8	7	1	8	0	8	8	9	7	10	6	11	5	12	4	13	3
9	8	0	9	0	10	0	11	0	12	0	13	0	14	0	15	0
10	8	8	10	0	11	1	12	2	13	3	14	4	15	5	16	6
11	9	7	11	0	12	2	13	4	14	6	16	8	17	1	18	3
12	10	6	12	0	13	3	14	6	16	0	17	3	18	6	20	0
13	11	5	13	0	14	4	15	8	17	3	19	7	20	2	21	6
14	12	4	14	0	15	5	17	1	18	6	20	2	21	7	23	3
15	13	3	15	0	16	6	18	3	20	0	21	6	23	3	25	0
16	14	2	16	0	17	7	19	5	21	3	23	1	24	8	26	6
17	15	1	17	0	18	8	20	7	22	6	24	5	26	4	28	3
18	16	0	18	0	20	0	22	0	24	0	26	0	28	0	30	0
19	16	8	19	0	21	1	23	2	25	3	27	4	29	5	31	6
20	17	7	20	0	22	2	24	4	26	6	28	8	31	1	33	3
21	18	6	21	0	23	3	25	6	28	0	30	3	32	6	35	0
22	19	5	22	0	24	4	26	8	29	3	31	7	34	2	36	6
23	20	4	23	0	25	5	28	1	30	6	33	2	35	7	38	3
24	21	3	24	0	26	6	29	3	32	0	34	6	37	3	40	0
25	22	2	25	0	27	7	30	5	33	3	36	1	38	8	41	6
26	23	1	26	0	28	8	31	7	34	6	37	5	40	4	43	3
27	24	0	27	0	30	0	33	0	36	0	39	0	42	0	45	0
28	24	8	28	0	31	1	34	2	37	3	40	4	43	5	46	6
29	25	7	29	0	32	2	35	4	38	6	41	8	45	1	48	3
30	26	6	30	0	33	3	36	6	40	0	43	3	46	6	50	0

The breadth of any Plaistering or other Work in Feet.

The length of any Plastering or
other Work in Feet.

F.	16		17		18		19		20		21		22	
	Y.	F.	Y.	F.	Y.	F.	Y.	F.	Y.	F.	Y.	F.	Y.	F.
1	1	7	1	8	2	0	2	1	2	2	2	3	2	4
2	3	5	3	7	4	0	4	2	4	4	4	6	4	8
3	5	3	5	6	6	0	6	3	6	6	7	0	7	3
4	7	1	7	5	8	0	8	4	8	8	9	3	9	7
5	8	8	9	4	10	0	10	5	11	1	11	6	12	2
6	10	6	11	3	12	0	12	6	13	3	14	0	14	6
7	12	4	13	2	14	0	14	7	15	5	16	3	17	1
8	14	2	15	1	16	0	16	8	17	7	18	6	19	5
9	16	0	17	0	18	0	19	0	20	0	21	0	22	0
10	17	7	18	8	20	0	21	1	22	2	23	3	24	4
11	19	5	20	7	22	0	23	2	24	4	25	6	26	8
12	21	3	22	6	24	0	25	3	26	6	28	0	29	3
13	23	1	24	5	26	0	27	4	28	8	30	3	31	7
14	24	8	26	4	28	0	29	5	31	1	33	6	34	2
15	26	6	28	3	30	0	31	6	33	3	35	0	36	6
16	28	4	30	2	32	0	33	7	35	5	37	3	39	1
17	30	2	32	1	34	0	35	8	37	7	39	6	41	5
18	32	0	34	0	36	0	38	0	40	0	42	0	44	0
19	33	7	35	8	38	0	40	1	42	2	44	3	46	4
20	35	5	37	7	40	0	42	2	44	4	46	6	48	8
21	37	3	39	6	42	0	44	3	46	6	49	0	51	3
22	39	1	41	5	44	0	46	4	48	8	51	3	53	7
23	40	8	43	4	46	0	48	5	51	1	53	6	56	2
24	42	6	45	3	48	0	50	6	53	3	56	0	58	6
25	44	4	47	2	50	0	52	7	55	5	58	3	61	1
26	46	2	49	1	52	0	54	8	57	7	60	6	63	5
27	48	0	51	0	54	0	57	0	60	0	63	0	66	0
28	49	7	52	8	56	0	58	1	62	2	65	3	68	4
29	50	5	54	7	58	0	61	2	64	4	67	6	70	8
30	52	3	56	6	60	0	62	3	66	6	70	0	73	3

The breadth of any Plastering or other Work in Feet.

(185)

The length of any Plaistering or
other Work in Feet.

F.	23		24		25		26		27		28		29		30	
	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.	Y.F.
1	2	5	2	6	2	7	2	8	3	0	3	1	3	2	3	3
2	5	1	5	3	5	5	5	7	6	0	6	2	6	4	6	6
3	7	6	8	0	8	3	8	6	9	0	9	3	9	6	10	0
4	10	2	10	6	11	1	11	5	12	0	12	4	12	8	13	3
5	12	7	13	3	13	8	14	4	15	0	15	5	16	1	16	6
6	15	3	16	0	16	6	17	3	18	0	18	6	19	3	20	0
7	17	8	18	6	19	5	20	2	21	0	21	7	22	5	23	3
8	20	4	21	3	22	2	23	1	24	0	24	8	25	7	26	6
9	23	0	24	0	25	0	26	0	27	0	28	0	29	0	30	0
10	25	5	26	6	27	7	28	8	29	0	31	1	32	2	33	3
11	28	1	32	0	30	5	33	7	33	0	34	2	35	4	36	6
12	30	6	34	6	33	3	34	6	36	0	37	3	38	6	40	0
13	33	2	37	5	36	1	39	5	39	0	40	4	41	8	43	
14	35	7	40	0	38	8	40	4	42	0	43	5	45	1	46	6
15	38	3	42	6	41	6	43	2	45	0	46	6	48	3	50	0
16	40	8	45	3	44	4	46	2	48	0	49	7	51	5	53	3
17	43	4	48	0	47	2	49	1	51	0	52	8	54	7	56	6
18	46	0	50	6	50	0	52	0	54	0	56	0	58	0	60	0
19	48	5	53	3	52	7	54	8	57	0	59	1	61	2	63	3
20	51	1	56	0	55	5	57	7	60	0	62	2	64	4	66	6
21	53	6	58	6	58	3	60	6	63	0	65	3	67	6	70	0
22	56	2	61	3	61	1	63	5	66	0	68	4	70	8	73	3
23	58	7	64	0	63	8	66	4	69	0	71	5	74	1	76	6
24	61	3	66	6	66	6	69	3	72	0	74	6	77	3	80	0
25	63	8	69	3	69	4	72	2	75	0	77	7	80	5	83	3
26	66	4	72	0	72	2	75	1	78	0	80	8	83	7	86	6
27	69	0	74	6	75	6	78	0	81	0	84	0	87	0	90	0
28	71	5	77	3	77	7	80	8	84	0	87	1	90	2	93	3
29	74	1	80	0	80	5	83	7	87	0	90	2	93	4	96	6
30	76	6			83	3	86	6	90	0	93	3	96	6	100	0

The breadth of any Plaistering or other Work in Feet.

Plaisterers, Joyners, Painters, and Paviers, measure their works by the *Yard Square*, which is 3 Foot every way, the Yard containing 9 Square Feet. For the ready computing or casting up of any such work, I have calculated the foregoing Table, which shews how many Square Yards are contained in any Piece of Work, the length and breadth thereof being given in Feet.

The Explanation of the Table.

THe Table consisteth of 8 Columns. In the first whereof is set down the *breadth* of any *Plaisterers, Joyners, Painters* or *Paviers* work, beginning at one Foot broad¹, and so downwards by 2, 3, 4, 5, &c. to 30 Foot, or 10 Yards. The other 30 Columns having the figures 1, 2, 3, 4, 5, &c. at the top or head of each of them, signifieth the *length* of any such work. So that if you find the *breadth* in the first Column of the Table, and the *length* at the head thereof, in the common meeting of these two numbers, you shall find the quantity of *Square Yards* contained in any piece of work, whose *length* and *breadth* is given in Feet.

The Use of the Table by Examples.

Example 1. *A Plaisterer hath laid a Cieling, containing 28 Foot in breadth, and 29 Foot in length, how many Square Yards are there in that Cieling?*

Find

Find 28 Foot in the first Column of the Table; and right against it, in that Column which hath 29 at the head thereof, you shall find 90 Yards, and 2 Foot, and so many Square Yards are there in that Cieling.

Example 2. *A Joyner hath Wainscoted a Room 7 Foot high, and 28 Foot broad, how many Yards Square of Wainscoting is there in that Room?*

In measuring of Joyners Work, if at the top thereof there be an *Architrave Frize* and *Cornice*, they measure both the *depth* and *length* of their *Work* by a String laid close to every Molding, and over every Stile; so that their *length* and *breadth* will be always more than the upright *height* and direct *length* of the sides of the Room; for say they, *We must be paid for all where our our Plain goes.* The Painter also says, *He must be paid where his Brush goes.* And the Plasterer in fretted Cielings, must also measure over all the frettings or hollows of his Work, as the Joyners do over their Moldings. These things considered; The height of the Room Wainscoted being 7 Foot, and 28 Foot about; find 28 Foot at the top of the Table, and 7 Foot in the first Column, and right against 7, and under 28, you shall find 21 Yards, and 7 Foot, which is somewhat above 3 quarters of a Yard.

Example

Example 3. *A Painter hath Painted a large Hall in Oyl, the height whereof is 23 Foot, and it is 120 Foot about, how many Square Yards of Painting is there in this Hall?*

Here, because the Compass about the Hall exceedeth the numbers in the Table, take therefore one quarter thereof, which is 30 Foot; then find 23 the height, in the first Column of the Table, and 30 (the quarter of the length or circuit) in the head of the Table, and under 30, and against 23, you shall find 76 Yards, and 6 Foot. And now because 30 was but one quarter of the Circuit of the Room, therefore 76 Yards 6 Foot, is but one quarter of the Yards of Painting; wherefore set down 76 Yards 6 Foot four times, and add them together as in the Margine, and the Sum of them will be 306 Yards, 6 Feet; and so much Painting is there in that Room.

76	6
76	6
76	6
76	6
<hr/>	
306	6

A TABLE, shewing the quantity of the length of one Rod of Wall in Feet and Inches, for any height, from One Foot high, to 30 Foot high.

Feet	F.	In.
1	27	2 3
2	13	6 1
3	9	0 9
4	6	8 0
5	5	4 5
6	4	5 4
7	3	8 1
8	3	4 0
9	3	0 3
10	2	7 2
11	2	4 4
12	2	1 8
13	2	0 1
14	1	9 5
15	1	8 2
16	1	7 0
17	1	6 0
18	1	5 2
19	1	4 4
20	1	3 8
21	1	3 0
22	1	2 4
23	1	1 10
24	1	1 5
25	1	0 11
26	1	0 6
27	1	0 1
28	0	9 9
29	0	9 5
30	0	9 1

The height of any Brick-wall, or House-side, in Feet.

The quantity of one Rods length in Feet and Inches.

Brick-layers do measure all Brickwork, whether Walls about Gardens, Parks, or other enclosed places, as also the Walls of Houses, by the Rod or Pole of 16 foot and an half, measured upon the Superficies or outside of the Wall or Building. Now for the ready measuring of such Wall or Brickwork, I have Calculated this Table, which shews upon any Wall, from One foot high to 30 foot high, how much in length thereof shall make a Square Rod or Pole.

An Explanation of the Table.

THE TABLE consists of two Columns, the first whereof contains the number of feet that any Wall or Building is in height, from One foot, to 30 foot high. The second Column declareth, that

that if a Wall be so many foot high, there must go so many feet and inches thereof in length, to make a Rod Square.

The Use of the Table by Examples.

Example 1. *If a Brick Wall be 9 foot high, how much thereof in length will make a Square Rod?*

Find 9 Foot the height of the Wall, in the first Column of the Table; and right against it, in the second Column, you shall find 30 foot, and 3 inches; and so much in the length thereof must go to make a Rod Square.

Example 2. *If a Wall or House side be 22 foot high, how much in length thereof will make a Rod Square?*

Find 22 the height, in the first Column, and right against it in the second Column, you shall find that 12 foot and 4 inches thereof in length, must go to make a Square Rod.

And thus much shall suffice for the Use of these Tables.

Conclusion.

AS Bricklayers measure all their Brick-work by the Square Rod; so they reduce all their Work of what thickness soever the Wall be, to the thickness of a Wall of one Brick and half; so that if a Wall be 24 Rod upon the Superficies thereof,

thereof, and that Wall be a Brick and half thick, then that Wall contains 24 Rod.

But, If a Wall be 24 Rod upon the Superficies or outside thereof, and that Wall be 3 Bricks and half thick; this Wall reduced to Brick and half thick, will contain 56 Rod.

Now for the easie reducing of any Wall of any thickness, not exceeding 10 Bricks thick, to the thickness of Brick and half; I have constituted several numbers for the thickness of all Walls, from Brick and half, to 10 Bricks thick. By help of which numbers, and the foregoing Table, *Shewing the true Square of any unequal sided Timber*, you may by adding of two numbers together, reduce any Wall to Brick and half.

The Constituted Numbers are these following.

If your Wall to be reduced to Brick & half, be	{ 2 Bricks thick 2 and half 3 Bricks 3 and half 4 Bricks 4 and half 5 Bricks 5 and half 6 Bricks 6 and half 7 Bricks 7 and half 8 Bricks 8 and half 9 Bricks 9 and half 10 Bricks }	Write down this number	{	0 1 4 4 9 4
				0 2 2 1 8 5
				0 3 0 1 0 3
				0 3 6 7 9 7
				0 4 2 5 9 6
				0 4 7 7 1 2
				0 5 2 2 8 8
				0 5 6 4 2 7
				0 6 0 2 0 6
				0 6 3 6 8 2
				0 6 6 9 0 0
				0 6 9 8 9 7
				0 7 2 6 9 9
				0 7 5 3 3 2
				0 7 7 8 1 5
				0 8 0 1 6 3
				0 8 2 3 9 0

The

**The Use of these Numbers, with the fore-
mentioned Table of the Square of
unequal sided Timber, made plain
by Examples.**

Example 1. *If a Brick Wall, 3 Bricks and half
thick, doth contain 24 Square Rod upon the Su-
perficies or outside thereof, how many Rod doth
that Wall contain, it being reduced to Brick and
half?*

To effect this, set down the Constituted num-
ber belonging to 3 Bricks and half, which is
036797. Then because there is 24 Rod of Wall,
look in the Table of the Square of un-
equal sided Timber, for the number
036797 24, against which you shall find this
138021 number 138021; add this number to
— the former constituted number, and
174818 the Sum of them is 174818, as in the
Margine. Look for this number in the Table
(or the nearest you can find to it) and you shall
find it to stand against 56; which shews, that in
the Wall, it being reduced to Brick and half,
there is 56 Rod. And so of any other.

Example 2. *If a Brick Wall of 5 Bricks and half
thick, do contain upon the Superficies thereof 11
Rod, how many Rod will that Wall contain, it
being reduced to a Brick and half?*

The Constituted number belonging to 5 Bricks
and

and half thick, is 056427, and the number in the Table against 11 Rod, is 104139, these two numbers added together, as in the Margine, make 160566. Look in the Table for this number, or the nearest to it, and you shall find the nearest number to it to be 160205, which number stands against 40, which declares that this Wall of 11 Rod, being reduced to Brick and half, will contain 40 Rod, and somewhat more; because the number 160566, is greater than 160205, by 361, that is, by the 361 parts of a Million, $\frac{361}{1000000}$, a part inconsiderable.

But when the difference sought, and the number found, shall be 250000, then allow a quarter of a Rod; when 500000, then half a Rod; when 750000, then three quarters of a Rod.



APPENDIX.

*How to take the true Diviensions, of
the old Foundation of any House or
Houses, and to draw a perfect
Draught or Plat thereof upon Paper.*

TO effect this, there are several wayes, but I
shall only instance in two ; both which
shall be familiar and easie to effect, and exact in
their performance ; and both of them depend
upon one and the same Geometrical Principle ;
so that the resolving of one Geometrical Pro-
bleme, will do the whole work. Which Pro-
bleme is this ;

*Any three right Lines being given, to make of them
a Triangle, whose three sides shall be equal to the
three given right Lines.*

In the Scheme or Diagram following , Fig. I.
Let the three right Lines given, be N, O, and P ;
of which the Line N is 14 Foot, the Line O is
12 Foot 2 Inches, and the Line P is 7 Foot 10
Inches. Now of these three Lines, let it be re-
quired to make a Triangle.

Upon

Upon Paper or such like, draw a right Line then from any Scale of equal parts, take 14 (representing 14 Foot, the length of the Line N,) and set it upon your Paper from Q to R. Then from your Scale, take in your Compasses the length of the Line O, 12 Foot, 2 Inches; and setting one Foot in the point R, with the other Foot describe the obscure Arch of Circle V V. Again, Take from your Scale the length of the given Line P, 7 Foot 10 Inches, and setting one Foot of the Compasses in Q, with the other Foot describe another obscure Arch of a Circle X X, crossing the former Arch in the point S. Lastly, Draw the right Lines R S, and Q S; so shall you have constituted the Triangle S R Q, whose three sides are equal to the three given Lines N, O, and P.

Note, That of the three right Lines given, if the two shorter of them, being added together, be not longer than the third Line, those three Lines will include no Triangle. As of the Numbers 2, 3, and 8; for 2 and 3 make but 5, which is less than 8 the third Line, &c.

In the Scheme or Diagram following, Fig. II. Let A B C D E F G represent the Ruinous Foundation of a House; and it is required to have a true Plat thereof drawn upon Paper.

First, In some wast Book, upon a piece of loose Paper, or upon a Board, draw the Figure of the bounds of the Foundation, as your eye judgeth them to lie; (it matters not how false you draw them; but draw just so many sides, and in the same Situation)

O 2

Secondly,

Secondly, With your 10 Foot Rod or Chain, measure the length of every side severally, as the side A B, 9 Foot, the side B C, 9 Foot 5 Inches, the side C D, 15 Foot 6 Inches, D E, 20 Foot 3 Inches, E F, 12 Foot 2 Inches, and F G, 7 Foot 10 Inches; all which set down in your rude or rough Draught.

Thirdly, Go to some one Corner of the Foundation, from whence you may best see, and most conveniently measure to all the other Angles. As here I go to the Corner at G, and from thence with my Rod or Chain, I measure from G, to the severall Angles B, C, D, and E; And I find, that

$$\text{From } \left. \begin{array}{l} \text{G to B} \\ \text{G to C} \\ \text{G to D} \\ \text{G to E} \end{array} \right\} \text{ Is } \left\{ \begin{array}{ll} 15 \text{ Foot } 1 \text{ Inch.} \\ 9 & 4 \\ 15 & 10 \\ 14 & 0 \end{array} \right.$$

These Lengths also set down in your rough Draught. These Dimensions thus taken, you may by help of them, and the former Geometrical Probleme, draw the true Plat thereof upon Paper at any time, as followeth.

How by help of your Rude Draught, and the former Dimensions, to draw the true Ichnographic or Ground-Plat thereof upon Paper.

First, Upon your Paper assign any convenient point, as G, for the Angle or Corner of the Foundation where you stood, and from whence you measured the Diagonal Lines G B, G C, G D, and G E; and through that point G, draw a Line at adventure for your first Diagonal G B; then

then (because that Diagonal Line contained 15 Foot and 1 Inch, (take 15 Foot 1 Inch from your Scale of equal parts, and set that distance upon the Line so drawn, from G to B. Again, (because the side G A of the Foundation, did contain 10 Foot 2 Inches in length) take 10 Foot 2 Inches from your Scale, and setting one Foot of that extent in G, with the other describe a small Arch of a Circle towards A; and (because the side A B, was 9 Foot) take 9 foot from your Scale, and setting one Foot of the Compasses in B, with the other describe another Arch of a Circle, crossing the former Arch in the point A. Then draw the Lines G A and A B, and so have you finished two sides of your Foundation.

Secondly, Your second Diagonal being 9 Foot 4 Inches, and the side B C, 9 Foot 5 Inches, take 9 Foot 4 Inches from your Scale, and setting one Foot in G, with the other describe an Arch of a Circle towards C; also, take 9 Foot 5 Inches from your Scale, and setting one Foot in B, with the other cross the former Arch in the point C, and draw the Line B C for the third side.

Thirdly, The third Diagonal G D, containing 15 Foot 10 Inches, and the side C D, 15 Foot 6 Inches, take 15 Foot 10 Inches from your Scale, and setting one Foot in G, with the other describe an Arch of a Circle towards D; and from your Scale, taking 15 Foot 6 Inches (the side C D) set one Foot in C, and with the other describe an Arch of a Circle, cutting the former Arch in the point D, and draw the line C D, for the fourth side of the Foundation.

Fourthly, The fourth Diagonal being 14 Foot,
 O 3 and

and the side D E, 20 Foot 3 Inches, take either of these numbers from your Scale, and with the distance of 20 Foot 3 Inches upon the point D, describe an Arch towards E, and with the distance 14 Foot, upon the point G, describe another Arch, cutting the former in the point E, then draw the Line D E; so is five sides of the Foundation finished.

Lastly, The side E F being 12 Foot 2 Inches, take that distance, and set one Foot in E, and with the other draw an Arch towards F. Also the side F G, being 7 Foot 10 Inches, take that distance from your Scale, and setting one Foot in G, with the other cross the former Arch in the point F. Then draw the Lines E F, and G F, so shall you have finished your Work; and the Figure A B C D E F G shall be a true and perfect Draught or Plat of that Foundation, the Angles retaining the same quantities as those on the ground do (or be equally Bevell (as Artificers term it) with them.) And this is one good and exact way to perform this work, and not only this, but to take the Plat of small Fields or Garden Plats also.

* *Objection.* But some may Object, that in Foundations where the hollow Cellars are underneath, we cannot strain a Chain truly cross from Angle to Angle, but it will sway in the middle, and make the distance longer than it is; and if we use a Line, and strain that hard, when it is taken from its place, it will shrivel up somewhat, and so being measured, will be less than the true distance. And again, Commonly in Cellars there is often Water, that you cannot pass cross
in

in them, and sometimes heaps of Rubbish, which lie much higher than the walls of the Foundation and what shall we do in such Cases?

Answer. I confess in long distances, a Chain will swag in the middle, and a Line hard strained will shrink, when removed from his place; but commonly in Foundations, these distances are seldome so large; but with your 10 Foot Rod, laid to the side of a Line strained and so measured, will do the work well enough. But where Rubbish lies higher than the top of the walls of the Foundation, there some other way must be found out; and therefore I shall shew you another way to perform the same work, which will clear both this and the other *Objection*.

A Second way to draw the Ichnographical Plat of any Foundation.

As in the former way (so in this) upon some spare Paper, or in some Book, draw a Rude or Rough Draught of the Foundation, as your eye judgeth of it; then measure the several sides thereof, and set them down upon their respective sides in your Rough Draught, and then proceed as followeth.

In Figure 3, of the following Scheme or Diagram, let the Figure H K L M represent the ruinous Foundation of some House, in the middle whereof there lies a high heap of Rubbish, so that you can in no wise measure cross the same.

Having first drawn a Rough Draught, and measured the several sides; as H K 39 foot, K L 35 foot, M L 26 foot 6 inches, and M H 30 foot 8 inches. Go then first to the Angle H or K, or any

any other, and from H, measure out upon the side of the Wall 10 foot, (or less as you see occasion) from H to d, also measure 10 foot (or more or less) from H to C, then from c to d strain a Line, and with your Rod measure the length thereof, which suppose 14 foot ; set these numbers and lines down in your Rough Draughts do the like at the Angle K, and set those down also. And by these measures you may draw a true and perfect Draught of your Foundation, as followeth.

How to draw your fair Draught.

First, Take a sheet of Paper, and laying your Rude Draught before you, draw a Line upon your Paper at adventure; then the side KH being 39 foot, take 39 foot from your Scale, and set it upon your Line thus drawn from H to K.

Secondly, (Because you measured 10 foot from H to c, and from K to a) take 10 foot from your Scale, and set that distance upon the Line KH, from K to a, and from H to c, and also upon the points H and K, describe two Arches of Circles towards d and b.

Thirdly, (Because the small Diagonal Line c d was 14 foot) take 14 foot from your Scale, and setting one foot in the point c, with the other foot describe an Arch, crossing the former Arch in the point d, and through the point d, draw a Line H d M. Again, (the Diagonal Line a b being 11 foot 9 inches) take 11 foot 9 inches from your Scale, and setting one foot in a, with the other cross the former Arch in b, and through b, draw the Line K b L.

Fourthly, The side of the Foundation H M being 30 foot 8 inches, and the side K L 35, take these two numbers from your Scale, and set 35 foot from K to L, and 30 foot 8 inches from H to M.

Lastly, Draw a Line from M to L, and so is your Work finished, and if it be true, then measuring the Line M L upon your Scale, you shall find it exactly to contain 26 foot 6 inches, agreeing to what you found it by measure.

Thus have I discovered two ways, by which any Foundation how irregular soever may be measured, and a Plat thereof drawn upon Paper; and by the same reason may the Plats of 2, 3, 10, or 20, lying together, or a part, be performed.

Note that the Foundation Figures 2 and 3, are drawn by two several Scales, the first being 10 times larger than the other.





any other, and from H, measure out upon the side of the Wall 10 foot, (or less as you see occasion) from H to d, also measure 10 foot (or more or less) from H to C, then from c to d strain a Line, and with your Rod measure the length thereof, which suppose 14 foot; set these numbers and lines down in your Rough Draught; do the like at the Angle K, and set those down also. And by these measures you may draw a true and perfect Draught of your Foundation, as followeth.

How to draw

First, Take a sheet of Paper before you, draw a Line the side KH being 39 foot and set it upon your Line.

Secondly, (Because you from K to a) take 10 foot distance upon the Line K and also upon the points Circles towards d and b.

Thirdly, (Because the foot) take 14 foot from the point c, with the compass the former Arch in the draw a Line H d M. Again 11 foot 9 inches) take and setting one foot in a Arch in b, and through

Fourthly, The side of 8 inches, and the side KL 35, take more two inches from your Scale, and set 35 foot from K to L, and 30 foot 8 inches from H to M.

Lastly, Draw a Line from M to L, and so is your Work finished, and if it be true, then measuring the Line M L upon your Scale, you shall find it exactly to contain 26 foot 6 inches, agreeing to what you found it by measure.

Thus have I discovered two wayes, by which any Foundation how irregular soever may be measured, and a Plan thereof drawn upon Paper; and by the same reason may the Plans of 2, 3, 10, or 20, lying together, or a part, be performed.

Note that the Foundation Figures 1 and 3, are drawn by two several Scales 10 times larger than the other.

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ble in parts.



A

Platform } Purchasers, Guide } FOR } Builders, Mate } } Measurers.

In THREE BOOKS.

I. *Tables of Simple and Compound Interest,* Resolving all Questions that concern the Purchase of Land, or Leases of Houses: Or the Rebate or Discount of Money, Pensions or Annuities forborne &c.

II. *General Rules, and Necessary Observations,* appertaining to the erection of Houses or other Edifices; declaring the Quantities of the several Materials belonging to Building, with the usual Rates of them, and of the Works of the respective Artificers therein employed. Whereby Estimators, Valuations and Contratts may be made, without damage either to Builder or Workman.

III. *Tables ready Calculated,* for the Mensuration of Board, Glass, Timber, Stone, &c. And of the Carpenters, Bricklayers, Plasterers, Glaziers, Joiners and Painters Works, either by the Foot, Yard, Square, Rod, or other measure.

wherunto is added,

The manner how to collect, and cast up a Bill of Measures; And to take the true Draught or Ground-Plat of any Foundation.

By WILLIAM LEYBOURN.

LONDON,

Printed by Thomas Ratcliffe and Thomas Daniel for Nathaniel Brooks, at the Angel in the second yard in Gresham Colledge. 1668.



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To the Right Worshipfull

Sir JOHN LAWRENCE Kt.

and Alderman of the City of London.

SIR,

IT is not from any private Obligation, but for the share I have (though it be but a little one) in the Common Interest and Welfare of the City, which is eminently promoted by your Care and Prudence, that I have studied to give some Testimony of my Gratitude and Observance to you; for as I have never had the happiness to be known to you, so neither to know you otherwise then by that general Fame, and great Character of your Wisdom, Vertue and Fidelity, which have highly endeared you to all intelligent men, and good Citizens. My first notice and motion to this enterprize, happened from the Communication of some judicious and worthy Members of that Honorable Corporation, mentioning, not without admiration, your incessant Study, Care and Activity, as in all other publique affairs of the City, so particularly in that blessed Work of its Rebuilding, and recovery out of the deplorable Ruines, wherein they had observed you were as sedulous and solicitous (and with answerable good success) as any man could be in his private Negotiations. What I thus understood from the private Communications of a few, I have since collected from all mens Discourses, to

The Epistle Dedicatory.

be the general sence and consent of the whole City. And my Genius inclining to this subject, I thought it also a Duty to be doing; and that I could tender nothing more acceptable to you, than what might conduce to the furtherance of that great, vast, and mighty Work. I had prepared it so long ago, that the more part of it was printed a twelve month since; but a diversion then upon an indispensible occasion to a far distant part of the Country, and a long and violent sickness ensuing, have lodg'd it in the Printers hands unfinished till this late hour of the day. May no like or other Accident make interruption upon your prudent managements, so available and necessary to the recovery of the antient happy and flourishing Estate of the once famous City; That it may be again, (as in all past ages it hath been) *Cor & Propugnaculum Regni*; That it may again disperse nourishment and refreshment into the exhausted Veins and Bowels of the Realm, and become strength and safety to our Gracious Sovereign; for these I am sure are your designs and endeavours, to which if I have any thing contributed by this little Treatise, I have also my end. However it will be some contentment to me, that I have intended well, and that I have given any evidence to the World of the just sence and esteem I have of your singular merit from the Publique, which alone hath rendred me,

SIR,

Your obliged, faithfull and
humble Servant,

William Leybourn.



To the Reader.

Friendly Reader,

THis Treatise which I now present unto thee, I finished in *July* 1667. and in *August* last the more part of it was Printed; at which time I being called away into the Country, it pleased God (immediately after my return) to visit me with a long and tedious sickness, of which I am not yet thoroughly recovered. This my absence, and sickness, so discouraged the Stationer, that he desisted the Printing, till he discovered some appearance of my recovery, which I intimate as the true reason of its so late production. But late as it is, it will supply thee with something thou hast not yet met with, and will justly administer both to *Buyers and Sellers, Landlords and Tenants, Lessors and Lessees, Builders and Workmen* in their respective concernments, the several points and purposes ensuing.

To give thee in brief the scope of the design, here is offered to thee for thy use and benefit: First, Five usefull and necessary Tables of *Anatocisme*, or *Compound Interest*, calculated to the Rate of 6*l.* per Centum per Annum, for any number of years under 31.

To the Reader.

The First of which Tables will tell you, What any sum of Money being forborn any number of years under 31, will amount unto. The Second shews, That if any sum of Money, due any number of years to come, under 31, what such sum is worth in present Money, Discounting or Rebating after the Rate of 6 *per Cent.* Compound Interest. The Third will tell you, What Annuity, Rent or Pension, being forborn or unpaid, for any number of years under 31, will be augmented unto. The Fourth shews, What any Annuity, Rent or Pension, to continue any number of years under 31, is worth in present Money. And the Last tells you, What Annuity, Rent or Pension, to continue any number of years under 31, any sum of Money will purchase. These are the Five Tables, and there is no Question that can be propounded in any of these kinds, but one or other of these Tables will resolve it. I have calculated the several Tables both in *Vulgar Numbers*, as *Pounds, Shillings, Pence, and Farthings*, and in *Decimal Numbers* also, to shew the difference between them in the Arithmetical resolving of any Question, whereby the difficulty of the one, and the facility of the other may be discerned. And here I have not only inserted the Tables themselves, but laid down the *Canon, Analogie, or Proportion* by which they were made, whereby the Tables may be continued to any farther number of years, and to any other Rate of Interest. Each particular Table I have illustrated by Examples, in propounding and answering Questions of several kinds, properly appertaining to each Table,

To the Reader.

ble, and such as most men (at one time or other) will have occasion to make use of. For the rendering of the Arithmetical Work in the use of these Tables the more easie, I have (for the benefit of such who are not so well versed in the Science of Arithmetick, as the Use of these Tables do require) added a large Table of *Multiplication*, by which any man may Multiply any large sum, without any charge at all to his memory, although he cannot tell, without Book, that 5 times 6 is 30, or 3 times 4 is 12; which Table also I have made plain and easie by Examples. And for thy farther supply, I have added Tables of *Simple Interest* and *Rebate*, both at 6 and 8 *per Cent.* with the manner how to calculate the like Tables for any time, and for any other *Rate of Interest*: All which are exemplified by *Questions* propounded and answered by help of them.

In the Second Book I have in a plain and familiar way, given you the *Names, Rates, Qualities* and *Quantities* of the several *Materials* belonging to *Building*, and what quantity of each will be requisite for the erecting of any *Fabrick*, great or small; with a near *Estimate* of the *Prizes* of the said *Materials*, and of the *Works* of the several *Artificers* imployed in *Building*; not as a *Tax-Master*, but at such moderate *Rates* and *Prizes*, as (I think, nay) I know formerly they would have freely accepted. And by these helps *Estimates, Valuations, and Contracts* may be made without any great damage either to *Builder* or *Workman*. And unto this Second Book I have added the *Design* of the
Carcass

To the Reader.

Carcass or *Timber-Frame* of a *House*, and also of the *Floor*, and several sorts of *Roofs*, declaring the Names of the several *Members* thereof, which will be both profitable to *Workmen*, and delightful to all *Builders*.

In the Third Book, I have *Tables* ready *Calculated* for the *Mensuration* of the principal Materials belonging to Building, as *Board*, *Timber*, *Stone*, &c. And also for the *Mensuration* of the *Works* of the several Artificers therein employed, as the *Carpenters*, *Bricklayers*, *Masons*, *Plasterers*, *Glassiers*, *Joyners*, *Painters*, *Paviors*, &c. whether their *Work* be measured by the *Foot*, *Yard*, *Square*, or *Rod*, the dimensions being taken only in Feet and Inches.

And to bring up the Rear of all, I have added the manner how to collect and cast up a *Bill of Measures*, and to take the true *Draught* or *Ground-Plan* of any *House* or *Ruinous Foundation*, how irregular soever it be.

And now by the way (Friendly Reader) let me acquaint thee, that besides the pains I have taken in the composure of the Five formentioned *Tables*, and exemplifying the uses of them, in the Resolving of such *Questions* as concern *Anatocism*, or *Compound Usury*, rendring the Arithmetical Work of every of them so plain and easie as it is possible; I have yet (notwithstanding all this pains) made a farther progress in this kind; for I have now published with this Book, *A Large Table* to be hanged up in any Counting-house, or other convenient place, which *Table* declares, and that by inspection, (without any manner of *Arithmetical Calculation*)

To the Reader.

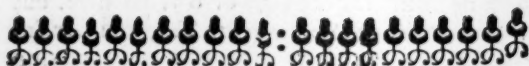
tion) the present worth of any *Annuity, Rent or Pension*, either in present *Possession*, or in *Reversion*, from the *Annual Rent* of 20 s. to 100 l. *per annum*: And for any number of years from *One* to 30; and from thence, by Tens of years, to 100 years; and this *Table* (which is in part the same with my Fourth forementioned) is calculated not only for the *Rate* of 6 l. *per Cent.* but for the *Rates* of *Six, Eight, Ten, and Twelve Pound* in the *Hundred*; where by only looking upon the *Table*, you may be satisfied, what *Rate of Interest* you are allowed for the *Money* you lay out in any *Purchase*. Or, If such a *Sum of Money* be demanded for such an *Annual Rent*, for such a number of *Years*, this *Table* will immediately inform you what profit the *Seller* or *Lessor* demands, and so satisfy your self of the *goodness* or *badness* of the *Bargain*. This *Table* (or *Tables* rather) are illustrated by variety of *Examples*, printed with them, in some of which there is something of *Arithmetick* required, but it is no more than the common *addition* of two or three *Sums* (at the most) together, which every *Child* (almost) is able to perform.

And thus (*Friendly Reader*) this *Table*, or *Tables*, together with the forementioned *Three Books*, I commend to thee, hoping they will prove no less useful unto thee, nor receive worse acceptance from thee, than its *Elder Brethren* have done already; and so I bid thee heartily *Farewell*.

June 24. 1667.

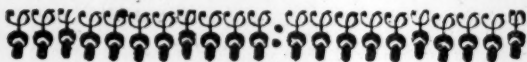
Will. Leybourn.

Errat



ERRATA

PAGE 6. line 3. *dele* but, p. 9. l. 3. *2d* r. *Art*, l. 16. *dele*
Times, p. 47. over line 12. insert 536.6357. p. 56.
l. 23. 20 years r. 10 years, p. 63. l. 25. r. *are these Tables*,
p. 112. l. 10. *direction* r. *erection*, p. 127. l. 17. r. *it will*
not be impertinent, p. 128. l. 7. r. *reduced to Brick and half*,
p. 169. l. 16. r. *by either*, p. 187. l. 22. *dele These*, p. 191.
l. 12. r. *Table in page 166.* In several places for Cable end
read Gable end.



ADVER-

ADVERTISEMENT.

IF any Gentleman, or other Person, desire to be instructed in any of the Sciences Mathematical, as *Arithmetick*, *Geometry*, *Astronomy*, the use of the *Globes*, *Trigonometry*, *Navigation*, *Surveying of Land*, *Dialling*, or the like; Either at their own houses, his habitation, or such other convenient place as the Party shall direct, the *Author* hereof will be ready to attend them at times appointed.

Also, If any Persons would have their Land, or any Ground for Building *Surveyed*, or any Edifice or Building *Measured*, either for the *Carpenters*, *Bricklayers*, *Plasterers*, *Glasiers*, *Joyners*, or *Masons* Work, he is ready to perform the same either for *Master Builder* or *Workman*.

Likewise, If any Person desire to have about his House or Garden, any kind of Sun-Dial, or Dials, of what kind soever, either fixed or movable, he will prepare or make for them such as they shall desire.

You may hear of him at the Shop of Mr. *Nathaniel Brooks* Bookseller, at the Angel in *Greatham Colledge*, now the *Exchange*; Or at the House of Mr. *Walter Hayes*, at the Cross-Daggers in *Moorfields*, next door to the *Popes-head Tavern*, where you may have all sorts of Mathematical Instruments: Likewise at Mr. *Duttons* at the Sign of the Sun-Dial in *Holborn*, over against *Fetter-lane*.

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Fig. I.

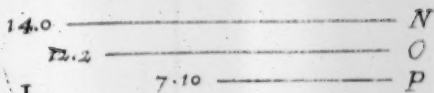
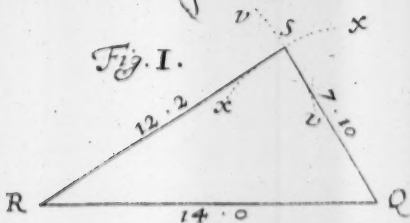


Fig. III.

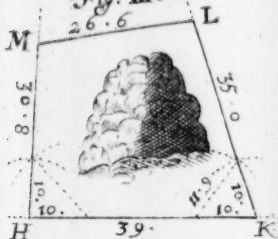
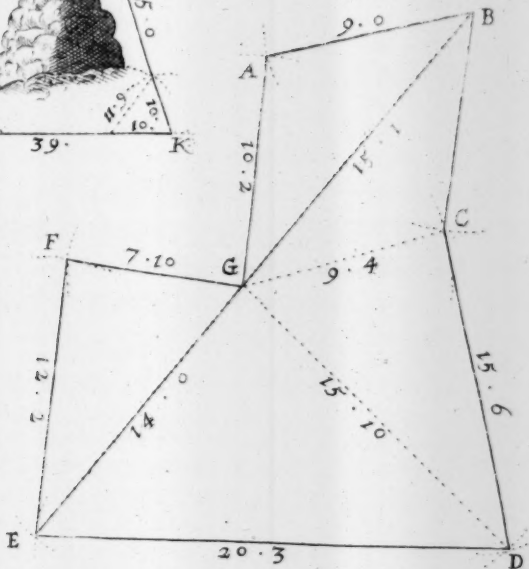


Fig. II.



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The First Book.

Ditissimus,
Inquilinus,
Rationarius, } Interlocutors.

Inquilinus.



IR well met, I make my appearance here at this time, in obedience to the Court, and according to your Summons.

Ditissimus ; You are well met, but I come not hither to meet you only, but others, who (indeed) constrain me to it.

Inq. Indeed I wondered at your summoning of me hither, you know (I think) that I was never addicted to contention ; but upon any occasion of difference, have at all times been more willing to reconcile, than make the breach wider.

B

Ditiss.

Ditif. For my part, I had rather, and could wish that the difference which at present is between us, might be ended by our selves, (if possible) without the troubling of a Court or any other person.

Inq. I am very free to end it without the Court; but your demands are (in my judgement) so unreasonable, that I fear when we do meet it will be but to little purpose.

Ditif. If you think my demands unreasonable, let me hear what overture you will make, that I may judge of the reasonableness thereof.

Inq. When I see you last (I conceive) I made then as fair an offer as you (or any man in reason) could expect from me, who have been to your knowledge so great a loser by the late Casualty.

Ditif. I confess your losses have been great, and I think my proffer to you at our last meeting was very fair: But that you shall see that I am as unwilling to go to Law, or to trouble any Court as you are, what think you if we should referr our difference to our quondam neighbour and friend *Rationarius*? whom you well know both for his integrity and ability.

Inq. He is the man with whom I have a longing desire to speak, and would (could I have heard of him since this general dispersement of friends) have acquainted him with our difference, and advised with him concerning it.

Ditif. I am very glad you so freely condescend to so just and reasonable a proposal, wherefore let us appoint a time to go to him.

Inq. Do you please to nominate the time and place, and I will wait upon you.

Ditif.

Ditif. To morrow morning.

Inq. With all my heart, but I hope we may save that labour, and end our business now; for see, yonder he comes.

Ditif. VVee will motion it to him now, if he be at leasure.

Inq. I conceive it not so convenient now to fall point blank upon him with our particular difference, but (if he be at leasure) let us take him aside, and discourse with him concerning affairs in general between Landlord and Tenant, possibly we may gather from him in discourse, that which may satisfie both you and me concerning our particular, without acquainting him of any difference there is betwixt us. And this way I would the rather go, because (although I be Tenant to you, yet) I have Tenants my self, with some of which I am fearfull I shall have more trouble in contesting with, than I am willing to undergo.

Ditif. I like your motion very well, and one houres discourse with him may give us satisfaction, not only in our own case, but in others of the like nature.

Rati. My good neighbours and friends well met, I am heartily glad to see you both in good health; this late dissolution by Fire hath so dispe-fed us, that it is a very great mercy and comfort for friends and neighbours to meet one another, but I am heartily glad to see you both.

Ditif. Seeing of you coming this way, we made this stand till you come up to us, intending (if your occasions will permit) to enjoy your good Company, and entertain half an houres discourse with you.

Rati. An hour is at any time at the service of either of you.

Inq. I give you many thanks.

Ditif. Whither shall we go ?

Rati. If you think it convenient we will walk a while in the *Temple-walks*.

Ditif. There are many contentions and differences that continually arise between Landlord and Tenant since the late dismall Fire, concerning the Leases and Fines given and taken for Houses, so that there is continuall hearings before the Judges, they determining the Cause between them as by Act of Parliament they are ordered and appointed.

Inqni. Methinks it is a great trouble for the Judges to meet as they do, cannot men agree among themselves, but sure it is for want of having some Rule prescribed them to walk by.

Ditif. *Rationarius* Sir, What Rule is there, or may be prescribed for the letting or selling of Leases of Houses ?

Rati. Neighbours, in my judgment there is nothing that I know that is so common among men, that requires more serious consideration than the selling or buying, letting or taking of Leases of Land or Houses, and of Houses especially.

Ditif. Why is there more difficulty in the one than in the other.

Rati. Houses are far more incident to casualties than Land is, and therefore cannot have so exact a method (in all cases) prescribed, as in the letting or purchasing of Land; for 1. The Permanencie of Land, it decays not as houses do: 2. The common casualties that they are (the best of them) liable to, as by Rain, Winde, &c. which, makes them

them continually to be out of repair, so that the buyer or seller, the Lessor or Lessee can be at no certainty in any wise, and that is one chief reason.

Inq. But such bargains are continually made among men, and surely they go not by their own judgments only, but by some Rule that carries Authority along with it.

Rati. The chief Rule that I can prescribe unto you, (which is the only and best way to make the ballance equall between Lessor and Lessee) is the Rate that by the present power is set upon Money, which at this time is at 6 per Cent. It was in the time of King James at 8 per Cent, and in Queen Elizabeths daies at 10 per Cent.

Ditif. And pray Sir, how do they value Leases from this rate of money?

Rati. When Money was at 8 per Cent, a Lease of a House for 21 years was esteemed (generall casualties considered) worth 7 years purchase, by which account the purchaser was allowed 13 in the hundred profit for his money.

Inq. If that were esteemed then as a generall rule 21 years for 7 years purchase, What is a Lease of a house for 21 years worth, now that money is at the Rate of 6 per Cent?

Rati. You are to observe this as a general Rule, that if Interest money decrease, the Purchase of Land or Houses increase.

Ditif. This seems strange to me.

Rati. The reason of it is very plain; for the less profit is allowed for money, the greater sum of money must be disbursed for to bring in the like Profit. As for example. When money yielded 8 in the hundred, 100*l.* would then bring in 8*l.*

a year; but now it is at 6 per *Cent*, 100 *l* in a year will bring in but 6 *l*, so that 75 *l*. when money was at 8. per *Cent* would yield but 6 *l*. whereas now 100 *l*. will yield no more.

Ditif. This is a good reason, and I clearly apprehend it.

Inq. I could not at first conceive so, but I am now convinced, that it is so.

Rati. This being understood, if 13 in the hundred were esteemed a competent and indifferent profit, for a mans laying out of his money upon the purchase of Leases of Houses when money was at 8 per *cent*, I conceive, that if he have 10 in the hundred allowed for his money, it will be as reasonable and equall as the other was; for at this rate a Lease for 21 years is worth somewhat above 8 years and an half purchase.

Ditif. And this you conceive to be an indifferent rate to be allowed for the purchase of Leases of Houses now money is at 6 per *Cent*, 21 years for 8 years and an half purchase, and so proportionably for any other number of years?

Rati. Yes, I do account so; but do not mistake me, I do not mean that because 21 years is worth 8 years and an half purchase, that 42 years which is as much time more shall be worth 17 years purchase which is double the money; for (allowing 10 in the hundred profit for the money, as before) a Lease for 11 years will be worth 6 years and an half purchase, a Lease of 21 years will be worth but little more then 8 years and an half purchase, an a Lease of 31 years but 9 years and three quarters purchase, and of 60 years will be but worth 10 years purchase.

Inq.

Inq. I did not conceive, that because 21 years was worth 8 and a half years purchase, that 42 years should be worth 17 years purchase; but on the contrary, I could not conceive that a Lease of 10 years should be worth so much, and one of 60 years worth so little.

Ditif. I cannot conceive the reason of the so great disparity, but, would gladly be satisfied how it comes to pass.

Rati. The reason hereof is this: the increase which a man may make of his money by the quick return thereof produceth a profit equivalent with the loss which he sustaineth by parting with so large a Principall out of his hands for so long time, and men know not what errour they run into when they set a high rate and value upon a long Lease of a House, and under-value a short one.

Inqui. I should think if a man had money to spare, it were better to purchase a Lease for 40, 50, or 60 years, than for 21 years.

Ditif. I am of your mind also.

Rati. Let me hear your reasons.

Inqui. I conceive (and think that I am in the right) that if I give 7 years purchase for a Lease of 21 years, it will be 7 years ere my Principall money comes in again, and then have I but 14 years remaining for the increase of my money laid out, and in all the time of 21 years shall return my money but three times; Whereas, if I purchase a Lease of a House of 100 years, which I may have for 13 years purchase, although it will be 13 years before I receive my Principall money in again, yet after I shall have 87 years income for the profit of my money, and in the whole time receive my money al-

most 8 times over, and therefore I conceive the purchase of a long Lease (the price thereof so little augmenting) is far more beneficiall for me to purchase than a usuall Lease for the term of 21 years.

Rati. This is that which deceives most men, But let me tell you, if you purchase a Lease of 21 years for 7 years purchase, though you return your money but three times in all that 21 years, yet you are then at liberty to make such another bargain for 21 years longer, and after that for 21 years more; And if you continue so doing for five changes, which will be 105 years, (whereas your other one Lease was 100 years) you shall returne your Principal 15 times over, of which ten of those will be clear gain, and by the other Lease of 100 years, his profit will not be much above halffo much.

Ditif. I perceive by the president you have here given, that it is so; but the reason why it is so, I understand not.

Rati. The reason is this, long Leases are much overvalued, and short Leases undervalued, for in the purchase of a long lease the purchaser hath not above 8 in the hundred profit for his money; whereas in the purchase of a shorter Lease he hath after the rate of 13 in the hundred allowed him; but this is for want of due consideration, and practise hath made it almost a custome

Ing. How may these abuses be rectified, and men have a ballance to weigh these differences in, thereby to do right both to *Landlord* and *Tenants*?

Ditif. I do not see, but by what you have delivered, a man may as well wrong himself in letting of long or short Leases, as him that he deals withall.

Rati.

Rati. You say very right,

Ditif. To whom then shall we apply our selves.

Rati. To a^t the impartial Iudge and the determiner of all such differences; who neither regards buyer nor seller, *Landlord* or *Tenant*, but that both shall have an equall proportion in time and profit, to which I refer you.

Inqui. I would gladly embrace and honour so just a master.

Ditif. And I reward him to the best of my ability.

Rati. You are both my loving friends and neighbours, and I tell you, I have composed five Tables, which Tables will resolve any Question that can be proposed either for buying of Land or letting Leases of either Land or Houses, for Times Reversions, Pensions, Annuities, or any thing else of that nature; which Tables I have calculated for the present worth of money as now it is constituted, namely at 6 per *Cent.* compound interest, which Tables at our next meeting I will freely shew you, and the manner how to use them; wherefore when you have armed your selves with Questions, if you repair to me, I will shew you the way how by my Tables to resolve them, and any of the like nature; and also give you directions how to make the like Tables for any other rate of Interest, and for what number of years you please. And now (till our next meeting) I bid you both heartily farewell.

Inqui.



Inquilinus.

SIR, I am come to wait upon you to know what time would be convenient for us to go to our friend *Rationarius*, to see those Tables he told us (at our last meeting) he had Calculated, and would shew us, and the use of them, in answering of Questions concerning Interest and Annuities, and about the selling or letting of Land or Houses; for I have diverse Questions to propose to him, which if his Tables will resolve (as I do not Question but they will, we having his word for it) they will prove to be of singular use to all men as well as to you and me.

Ditissimus. I had been with him before now, but that I expected you to call me; for I have several Questions concerning my own affairs which I would have him shew me how to resolve; wherefore I am ready at any time to go to him, now if you will.

Inq. I came to you for that very end.

Ditiss. Come then, let us go.

Inq. I will wait upon you.

Ditiss. Sir we have made bold to trouble you at this time, to claim the promise you were (at our last meeting) pleased to offer so freely unto us.

Rationarius. Gentlemen and Friends, you are welcome to me, and what is in my power, is at your command. You speak now concerning the Tables of Compound Interest which I told you I had Calculated.

Inq.

Inq. We do Sir.

Rationarius. Pray Gentlemen sit down, and I will bring them to you.

Dit. How free is this Gentleman to impart his knowledge to us upon so slender an acquaintance?

Inq. I ever observed him to be of milde and free temper and disposition, and now I finde him to be so.

Rationarius. See here Friends, these are my five Tables I told you of.

By the first of which you may know, *What any sum of money, being forborne any time under 31 years, will be augmented unto.*

My second will resolve you, *That if a sum of money be to be forborne any number of years under 31, what that sum is worth in ready money.*

The third will tell you, *What any Annkity, Rent or Pension, (to be annually paid) will amount unto, if the same be forborne any number of years under 31.*

And by the fourth you may finde, *What any annuall Rent, Pension, or the like (if forborne any number of years under 31) will yield (or is worth) in ready money.*

And my fifth Table will informe you, *What Annuity, Rent, or Pension, payable yearly, any sum of money will purchase.*

Inq. Indeed they are all of singular good use, I wish I understood them, and knew how to use them.

Dit. In my judgment the last Table seems to be of the most generall use.

Rationar. They are all so usefull, that at one time or other, either the *Seller or Purchaser, the Landlord*

Landlord or Tenant, the *Debtor or Creditor*, will have occasion for them, and if any of them had been superfluous, I would not have taken the pains to calculate it, But if you are provided of *Questions* of which you would be resolved, let me see them, and you shall receive satisfaction in the solution of them.

Inq. Those which I desire to be resolved in, are here in Writing.

Dit. f. And so are mine also.

Rationa. Let me see them ——— In the resolving of these *Questions* all the five Tables will be made use of. Some of them will be answered by my first Table, some by the second, &c. Wherefore, I will pick out all that are to be resolved by the first Table first, and then such as will come under the notion of the second; and so of all the rest in order, all which you shall see easily and familiarly resolved.

THE

THE
Description, Construction and Use
OF

FIVE necessary
TABLES.

Calculated (both in Decimal
Numbers, and according to Vul-
gar Arithmetick) after the
rate of 6 per Cent. com-
pound Interest.

By which the present worth of
any Sum of Money to be forborn
for any number of Years, or to be
discounted or rebated for, or any
Annuity, Rent or Pension, either
in present Possession or in Rever-
sion, is worth in Ready money.

L O N D O N,

Printed in the Year, 1667.

THE LIFE OF SAMUEL JOHNSON

FIVE DECIMAL TABLES.

Calculated by the late Mr. John Machin

and published by W. Johnston, at the

Printers, in Pall-mall.

1706.

Price 1s.

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The first Table.

Declaring what any Sum of Money, being for-
born any number of Dayes, Weeks, Moneths,
or Years, under 31. will be augmented
unto, accounting Interest upon Inte-
rest at 6 per Cent. per Annum.

l. s. d. q.				Decimal parts.	Years	l. s. d. q.				Decimal parts.
Dayes.					1	1	1	2	2	1.06000
					2	1	2	5	2	1.12360
					3	1	3	9	3	1.19101
					4	1	5	3	0	1.26147
					5	1	6	9	0	1.33922
					6	1	8	4	2	1.41852
					7	1	10	0	3	1.50363
					8	1	11	10	2	1.59385
					9	1	13	9	2	1.68948
					10	1	15	9	3	1.79085
					11	1	17	11	2	1.89830
					12	2	0	3	0	2.01219
					13	2	2	7	3	2.13292
					14	2	5	2	2	2.26090
					15	2	7	11	1	2.39656
					16	2	10	9	2	2.54035
					17	2	13	10	1	2.69277
					18	2	17	1	0	2.85444
					19	3	0	6	0	3.02560
					20	3	4	1	3	3.20714
					21	3	7	11	3	3.39956
					22	3	12	0	3	3.60354
					23	3	16	4	3	3.81975
					24	4	0	11	3	4.04893
					25	4	5	10	0	4.29187
					26	4	10	11	3	4.54938
					27	4	16	5	2	4.82234
					28	5	2	2	3	5.11168
					29	5	8	4	2	5.41838
					30	5	14	10	1	5.74349
Weeks.					1	1	0	0	1	1.00112
					2	1	0	0	2	1.00224
					3	1	0	1	0	1.00336
Moneths.					1	1	0	1	1	1.00487
					2	1	0	2	1	1.00976
					3	1	0	3	2	1.01467
					4	1	0	4	3	1.01961
					5	1	0	5	3	1.02457
					6	1	0	7	0	1.02956
					7	1	0	8	1	1.03457
					8	1	0	9	2	1.03961
					9	1	0	10	3	1.04467
					10	1	1	0	0	1.04975
					11	1	1	1	1	1.05486

A Description of this TABLE.

Rational. **B**Efore I declare unto you, either the Construction or use of the Table, I will first discover the parts of it unto you, which are chiefly two. The first consisting of *Dayes, Weekes, and Moneths*, As of *Dayes* from one to 6 compleat, of *Weekes* from 1 to 3 compleat, and of *Moneths* from 1 to 11 compleat. The second consisteth of *Years*, from one Year to 30 Years compleat.

Now against every *Day, Week, Month, and Year*, there stands in two Rows or Columns, two certain Numbers, the one of *Pounds, Shillings, Pence, and Farthings*, thus marked or noted at the head of each Column, *l. s. d. q.* *l.* signifying *Pounds*, *s.* *Shillings*, *d.* *Pence*, and *q.* *Farthings*, these numbers stand in the first of the two broad Rows or Columns. And in the second Column, there stands divers other Numbers, called (as by the title over them may appear) *Decimal parts*.

So in this first Table, against 1 Year, you shall finde 1 *l.* 1 *s.* 2 *d.* 2 *q.* to stand, and the Decimal part that stands against the same year is, 1. 06000 which in Decimals signifies the same with 1 *l.* 1 *s.* 2 *d.* 2 *q.* the figure 1 standing to the right hand signifying one pound sterling, and the other figures 06000 are the Decimal parts of a pound sterling.

Inquil. I see plainly that against 1 year there stands 1 *l.* 1 *s.* 2 *d.* 2 *q.* and also this number 1. 06000 and likewise that against 7 years there stands 1 *l.* 10 *s.* 0 *d.* 3 *q.* and this number 1. 50363 — and also that against 23 years there stands 3 *l.* 16 *s.* 4 *d.* 3 *q.* and this Decimal part.

Dismiss

Disf. I perceive the same also, and that against 2 weeks there stands 1 l. 0 s. 0 d. 2 q. with this Decimal part 100224. ——— And that against 6 months there stands 1 l. 0 s. 7 d. 0 q. with this Decimal part 102956. but what the meaning thereof is, I know not.

Inq. I am at a stand for that also.

Ration. Concerning that, I will give you immediate satisfaction. The 3 l. 16 s. 4 d. 3 q. which you see stand against 23 years, declares thus much, *That if one pound or 20 shillings should be forborn for 23 years, it would be augmented or increased to 3 l. 16 s. 4 d. 3 q.*

Inq. Is that the meaning of it? and is it so in all the rest of the numbers?

Ration. The same.

Inq. So then this Table tells me, that if 20 s. or one pound should be forborn 3 years, it would be augmented or increased to 1 l. 3 s. 9 d. 3 q. and in 10 years it would be increased to 1 l. 15 s. 9 d. 3 q. and in 28 years, to 5 l. 2 s. 2 d. 3 q. ——— Or in 6 months it would be increased to 1 l. 0 s. 7 d. 0 q.

Ration. You understand it rightly, and that is the true intent and meaning of those numbers set against any number of *Dayes, Weeks, Months, or Years.*

Disf. I understand this very well, but Sir, what do those Decimal parts which stand in the other Column against every year signifie? I understand not them.

Inq. Nor I neither.

Rat on. They signifie the same in Decimals, as the other do in Pounds, Shillings, Pence, and farthings.

things. Supposing one pound or 20 s. to be divided into 100000 parts. — As against 5 years, you see there stands 1 l. 6 s. 9 d. and this Decimal part, 1.33822. Now the figure 1. which stands towards the right hand, having a point after it, signifies 1 l. and 33822. which stands towards the right hand of the point, signifies, that if one pound, or 20 s. were divided (as here we suppose it to be) into 100000 parts, that number is 33822 of those parts, which is equal in value to 6 s. 9 d.

Inq. So then the Decimal part which stands against 13 years, being 2.13292. signifies 2 l. and 13292 parts of a pound, the pound being supposed to be divided into 100000 parts, which 13292 parts is equal in value to 2 s. 7 d. 3 q.

Ration. You apprehend as it is. And the reason that these numbers are so put, is for ease in Calculation, as I shall discover to you anon, all Multiplication of Pounds, Shillings and Pence, being by this means avoided, and the multiplying of whole numbers only effecting the work intended with more facility and exactness; as in the construction and use both of this, and the other Tables, you will plainly perceive. And so now I will shew you.

The Construction of this T A B L E.

Inq. **T**HAT will be very satisfactory to me.

Diris. And to me also.

Ration. Then I will discover unto you the making of them, both according to vulgar Arithmetick, and also according to Decimals; and thereby you shall judge of the difference, and use that which best likes you. And here note, that all these 5
Tables

Tables are composed according to the present worth of money as it is by authority allowed, which at this time is at 6 *l. per cent.*.. This being presupposed, the Analogie or proportion by which this Table is composed, is as followeth.

I. *By Vulgar Arithmetick.*

As 100 *l.*

Is to 106 *l.* the Principal and Interest for one year,

So is 1 Pound or 20 *s.*

To the increase of 1 *l.* or 20 *s.* in a year.

Wherefore you must say by the Golden Rule, or Rule of Three. Say,

If 100 *l.* in a year, will be augmented to 106 *l.* to what will 1 *l.* be augmented to in the same time?

Inq. This stands to good reason.

Ration. Set your numbers in this Order,

If 100 *l.* yeild 106 *l.* what 1 *l.*

You must turn your 106 *l.* first into shillings, by multiplying it by 20, and it will make 2120 *s.* then you must turn those shillings into Pence, by multiplying them by 12, and they make 25440 *d.* these pence you must turn into Farthings, by multiplying them by 4, and they make 101760 *q.*

These farthings you must divide by 100, (which is done by cutting off the two last figures towards the right hand,) and the Quotient is 1017 farthings, and $\frac{16}{100}$ of a farthing, and to so much will 1 *l.* or 20 *s.* be increased to in a year.

Then divide 1017 by 4, and it produceth 254 *d.* and 1 *q.* $\frac{6}{100}$.

Divide 254 *d.* by 12, it produceth 21 *s.* and 2 *d.*

II. *By Decimals.*

As 100 *l.*

Is to 106 *l.* the principal and increase,
So is 1, or Unity, with any number of Cyphers
added to it, (as five) to the Decimal belonging
to the increase of one ponnd.

Wherefore set your numbers thus.

As 100 *l.* to 106 *l.* so is 1 *l.* 00000 to what?

Multiply 1 *l.* 00000 by 106 *l.* and it produceth
10600000, which divide by 100 (which is done
by cutting off the two last figures or Cyphers to
the right hand) and it then is 1. 06000. As by
the Work you may see.

$$\begin{array}{r}
 100 \text{ l. } \text{---} 106 \text{ l. } \text{---} 1 \text{ l. } 00000 \\
 \phantom{100 \text{ l. } \text{---} 106 \text{ l. } \text{---} 1 \text{ l. } } 106 \\
 \hline
 6000000 \\
 1.0000000 \\
 \hline
 1.06000 \mid 00
 \end{array}$$

This 1. 06000 is the Decimal-part belonging to
the increase of 1 *l.* or 20 *s.* for a year, and is the
same number with that in the Table.

Inq. This is wonderfull easie and expeditious
over the other is; but is it so exact?

Ration. Every jot, and the more Cyphers you
add to Unity, the more exacter it will be, as after
a while I will discover unto you. But first let me
shew you how to find the numbers belonging to
the second, third, and fourth years, &c.

Ditif. That will be very convenient.

Ration. They are thus found, the Analogie being much the same. For,

As 100

Isto 106000 the increase for 18.

So is 106, the principal and interest for 1 year.

To 1. 12360, the increase for 2 years.

And this is the second number in the Table.

Then for the third number. Say,

As 100

Isto 1. 12360 the increase of 20 s. for 2 years,

So is 106 the principal and interest for 1 year.

To 1. 19101 the increase for 3 years.

And thus may you continue the Table to what number of years you please.

Inq. Then for the fourth year, I must say,

As 100

Isto 1. 19101

So is 106

To a fourth number.

That is, I must multiply 1. 19101 (the preceding years increase) by 106 (the common principal and interest) and cutting off the two last figures; So have I 1. 26247 for my fourth years increase, as I have here done it.

$$\begin{array}{r}
 100 - 1. 19101 - 106 \\
 \quad \quad \quad 106 \\
 \hline
 \quad \quad \quad 714606 \\
 1191010 \\
 \hline
 1. 26247 | 06
 \end{array}$$

Ration.

Ration. You understand it very well, and have truly wrought it.

Inq. I thank you for your instructions, which are so plain, that he must be very ignorant indeed, that cannot learn by your directions.

Ditif. What hath been hitherto delivered, I right-well understand, and I like these Decimal parts, and prize them for their ease and facility in the Arithmetical work; Division being wholly avoyded. But when I have found these numbers, I know not what to make of them, that is, I do not know how to find how many Pounds, Shillings, Pence, and Farthings, are contained in this 1.12360 (which is the second number) in the Table, or any other.

Ration. Having thus given you the general Description and construction of this Table, in the which I have been the larger, because I would remove all obstacles in those that follow, (for those are made either by the converse Rule, or some other equivalent.) I should now proceed to answer your Questions, but first I will shew you how you shall readily turn any Decimal part into Pounds, Shillings, Pence, and Farthings, which is the thing you now desire.

Ditif. Were I satisfied in that, I should think the use of the Table's easie.

Inq. I conceive, when I understand how to do that, I shall lay by Multiplying and Dividing of Pounds, Shillings, and Pence, and make use of these Decimal-parts which resolves the Question, as if they were numbers all of one denomination.

Ration. They do so indeed, and he that knows how to use them, will (in these and the like cases)

never use the other; however, I have set them down both wayes, that any man may use that which pleaseth him best. But now let me shew you how to turn a Decimal part into Pounds, Shillings, Pence, and Farthings.

Inq. That I would gladly know.

Ration. For to set down the whole Pounds, and the whole Shillings, from any Decimal part, is as easie, as to set them down the usual and common way; but to set down the parts of a Shilling, that is, the Pence and Farthings, is somewhat more troublesome, for that it will require a Table of Reduction, such as I have here inserted, which shews the quantity of Pence and Farthings which are contained under any Decimal part less than 500, 500 being the decimal part belonging to one Shilling. 250 the decimal part of 6 *d.* 125 the decimal part of 3 *d.* and 188 the decimal part belonging to 4 *d.* 2 *q.* and 073 the decimal part belonging to 1 *d.* 3 *q.* and so the rest as in the Table.

Ditif. I think I apprehend the use of this Table; As thus. If I have a Decimal part, being 365, is not that answerable to 8 *d.* 3 *q.*? and if I have 302, is not that answerable to 7 *d.* 1 *q.*?

Ration. It is so, and so throughout the Table, what number of Pence and Farthings stand against your Decimal part, those are the value of that Decimal part.

A TABLE of Reduction, shewing the
 Fraction parts of a Shilling in Deci-
 mal Numbers.

Decim. D	℥	Decim. D	℥	Decim. D	℥
parts.		parts.		parts.	
0100	1	1774	1	344 ⁸	1
0210	2	1884	2	354 ⁸	2
0310	3	1984	3	365 ⁸	3
0421	0	2085	0	3759	0
0521	1	2195	1	3859	1
0631	2	2295	2	3969	2
0731	3	2405	3	4069	3
0832	0	2506	0	417 ¹⁰	0
0942	1	2606	1	427 ¹⁰	1
1042	2	2716	2	437 ¹⁰	3
1152	3	2816	3	448 ¹⁰	
1253	0	2927	0	458 ¹¹	0
1353	1	3027	1	469 ¹¹	1
1463	2	3127	2	479 ¹¹	2
1563	3	3237	3	490 ¹¹	3
1674	0	3338	0	500 <i>A Shil.</i>	

Inq. This Table, and how to apply it, I understand very well; but how to set down the Pounds and Shillings, I understand not yet.

Ration. That I tell you is easie, and the manner how to effect it, I will now shew you. ——— Suppose 2. 13292 (which is the Decimal against 13 years)